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VOL. 2.—No. 2.

ST. LOUIS, AUGUST, 1893.

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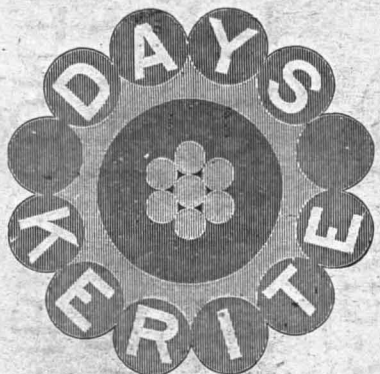
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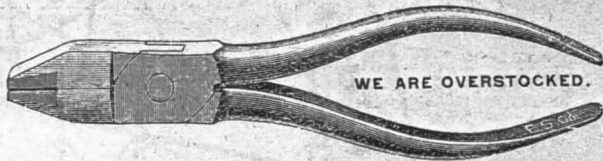
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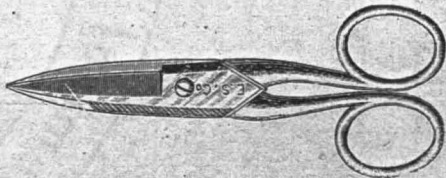
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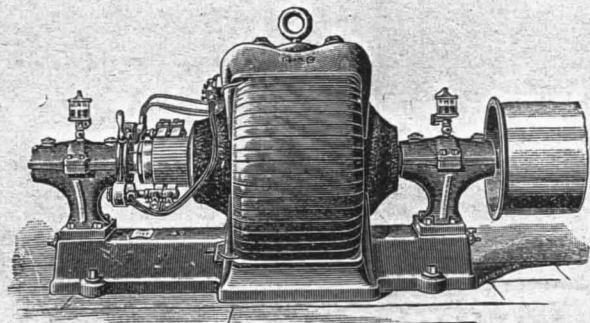
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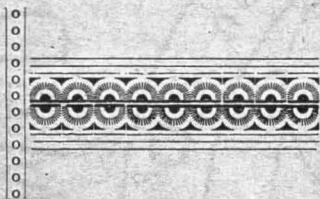


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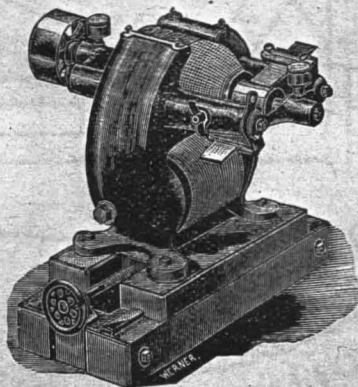
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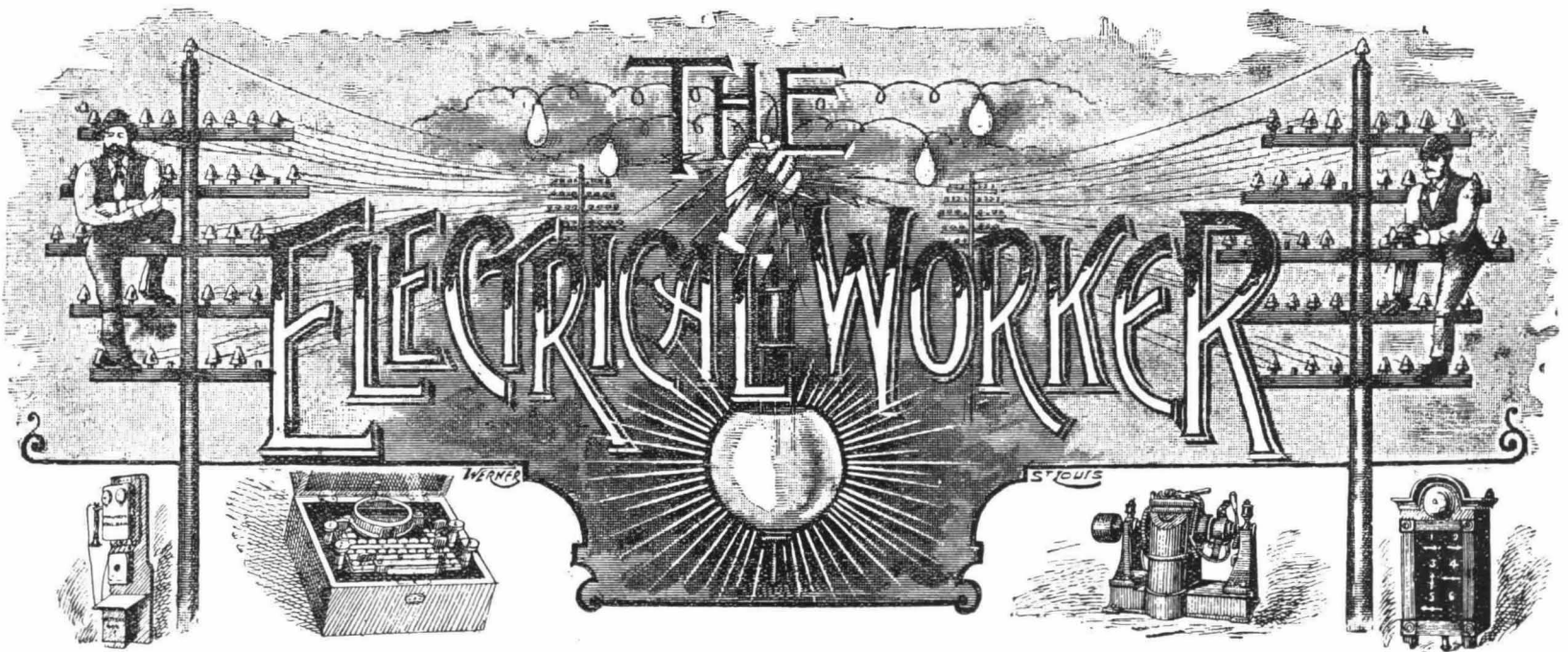
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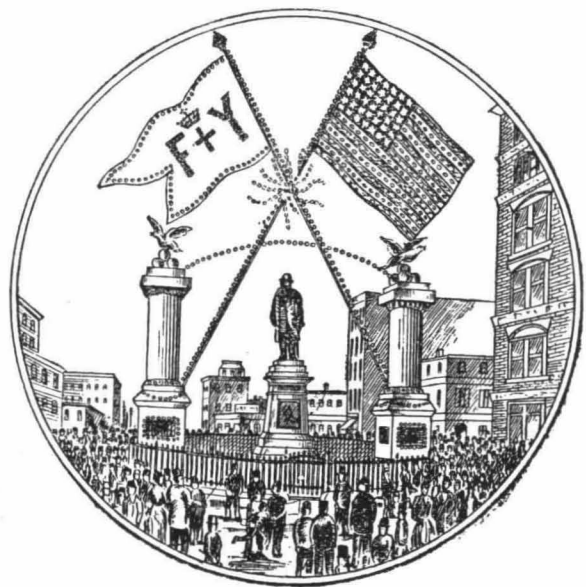
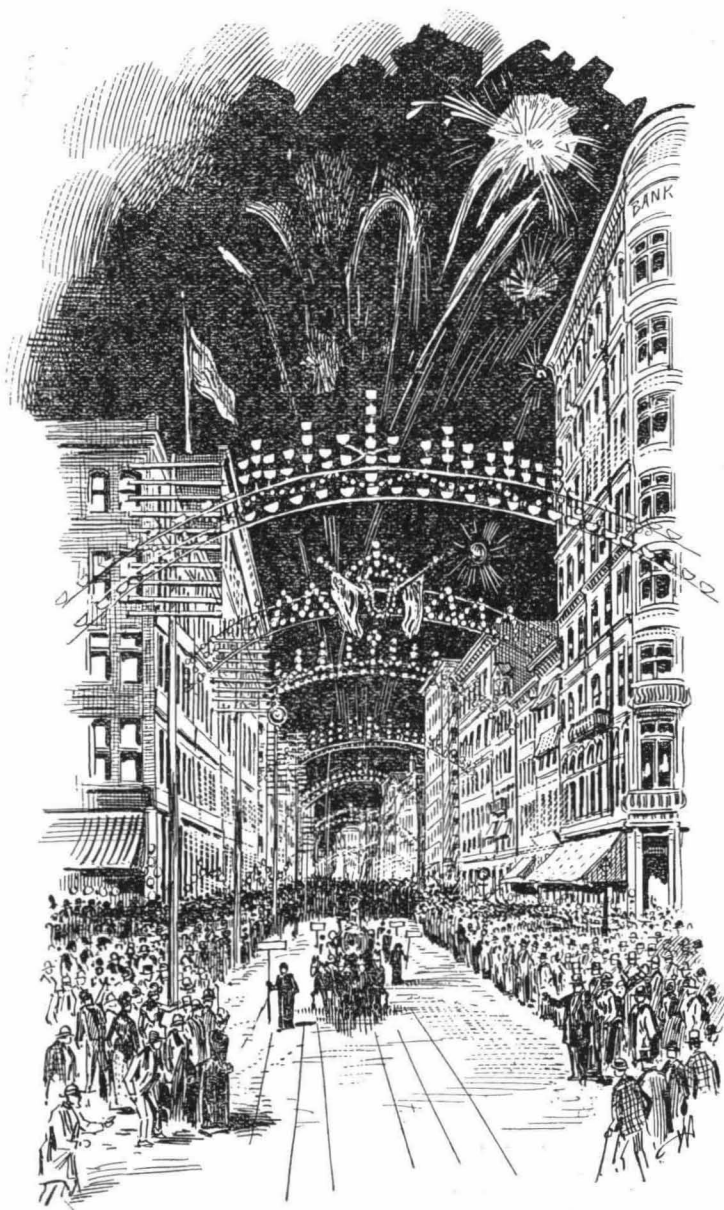


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STREET ILLUMINATION IN ST. LOUIS DURING THE FALL FESTIVITIES.

THOS. ALVA EDISON.

His Past Achievement and what we may Expect in the Future.

In this World's Fair year, we may be forgiven an excess of national self-consciousness which leads us to ask where we stand among the peoples of the earth; to cast about for the significance of this young cis-Atlantic civilization.

The answer is writ large over the length and breadth of the continent in our huge railway systems, containing more than half the track mileage of the entire world; in the telegraph lines besides them; in the net work of wires over and under our great cities; in the trans-oceanic cables with which, a quarter of a century ago, we brought the Old World within speaking distance of the New, and in the strange machines, telephones, phonographs, dynamos—which have revolutionized our industries and which will certainly revolutionize our whole society. In short, we are a nation of mechanics and inventors. This will clearly be our meaning to the historical students of a thousand years hence, as we say to-day that Greece bequeathed art to the world and Rome's heritage was law.

But half a century ago one might have felt secure in asserting that the great engineering triumphs of the age had come through the application of steam. And now, already, the more subtle agency of electricity has thrown the work of Watt and Stephenson and Fulton from the category of marvels and bids fair to supersede it altogether. Steam came but to prepare the way for the ever present, all-powerful "fluid," and we are being ushered into an age of electricity.

Curiously enough, there is among us an unassuming citizen who sums up in his personality and achievements this genius of the race, who is, one might almost say, to America what Cæsar was to Rome. If one were to ask what individual best symbolized this industrial regeneration for which we, as a nation will stand, it would be marvelously easy to answer, Thomas Alva Edison. The precocious self-reliance and restless energy of the New World; its brilliant defiance of traditions; the immediate adaptation of means to ends; and, above all, the distinctive inventive faculty reached in him their apogee.

The mere mass of this extraordinary man's work gives in itself a striking idea of the force which he exerts in our material progress. Up to a few days ago the government had granted Edison no less than seven hundred and twenty patents, while he had in addition one hundred and fifty applications on file. And during this working period that has not yet brought him within many years of the grand cli-macteric, and much of it accomplished in the face of discouraging financial obstacles.

Perhaps it will give a better idea of what Mr. Edison's work means to the world than any generalization or enumeration to simply state that the duplex and quadruplex systems of telegraphy begun by him in 1869, and finished after six years of work, have saved in America alone the enormous sum of \$15,000,000. By the duplex system two currents of different degrees of strength were sent over the wire in the same direction, thus doubling its efficiency, while the quadruplex arrangement became possible when it was discovered that these two currents could be sent in opposite directions at the same time—thus enabling one wire to transmit four simultaneous messages. Not satisfied with this, Mr. Edison is confident of attaining sextuplex and octuplex systems.

Through the mysterious qualities of a carbon button Mr. Edison has been able to construct a little machine called the tasimeter, which in different forms measures degrees of heat, of moisture, and—in the odoroscope and microphone—of odors and sound so small that it is difficult for the human mind to grasp the situation. The tasimeter will show a sensible deflection at the one-millionth of a degree of Fahrenheit. The heat from the human body standing eight feet away will be accurately registered; a lighted cigar held at the same distance will give a large deflection, as will the heat of a common gas jet one hundred feet away. When it is arranged to be sensitive to moisture, this astonishing instrument was deflected eleven degrees by a drop of water held on the finger five inches away. The microphone multiplies the intensity of sound by the hundred thousand, making the passage of the tiniest insect sound like a mighty, deafening roar.

Electrical science is in its infancy. Those who are greatest in the march of mechanical progress confidently predict that future discoveries will be as incredible to us as the present science would be to our forefathers of two centuries back. One single further secret won from nature will open a practically limitless field for electrical introduction and will probably be more decided in its quantitative results, as the technicians say, than any inven-

tion the world has ever seen. It is the direct production of electricity from oxygen and coal (carbon). At present we burn coal to obtain steam, which is transmuted into mechanical energy and thence into electricity. Before the energy of the coal reaches the dynamo six-sevenths of its power are lost, even under the very best conditions and afterwards one-tenth of the remainder. Find a way to dispense with the steam engine in this making of electricity and we have multiplied several times the available mechanical energy of the world. Thousands of the brightest and most earnest engineers and chemists are now striving, generally in secret, to obtain this gigantic result—beside which the philosopher's stone was but a bauble. Edison has worked on it and confidently predicts that the discovery will come. He asserts that he is no longer troubling himself about it, but he has a very well equipped chemical laboratory, in which, nowadays, he spends most of his time, and if he happens upon this secret we have no idea that he will let it pass by unnoticed.

While our industrious alchemists search for the Great Secret, we are doing the best in our power to make up for the inefficiency of steam by utilizing the energy of streams. In the falls of Niagara there are about three million horse-power hitherto wasted. But now a portion of this monster force is in the traces. One hundred thousand horse-power is caught by giant turbines, is transformed into electricity on the spot and then sent over wires to distant points to give light and turn wheels. The silent, invisible power is to be taken to the City of Buffalo or even farther, and as a local result that town is already looking forward to a population of 1,000,000. It helps us to realize our gain on nature when we think that even this bit stolen from Niagara—only one three-hundredth of her might—is equivalent to the continuous work, night and day, of six hundred thousand men. The question at once arises, why we do not utilize all the Niagara power and run every piece of machinery in New York City with it? Perhaps some day we may; but at present there is a practical limit to the long-distance transmission of power which puts this feat out of the question. At great distances there is too much resistance to be overcome to make it commercially efficient; "and the personal equation of the men who have the machinery in charge must always be taken into account," said Mr. Edison. "No machinery can be much beyond the conception of the men who run it. That is a point seldom thought of, but ever present in the consideration of these new problems."

It is now but a question of time when the mantle of the steam locomotive will fall on the electric car. The latter has made the first advances towards supplanting steam in such work as is required in the long B. & O. tunnel under the city of Baltimore, where whole trains—even freight trains with their locomotives attached—are hauled six or seven miles by powerful electric motors. The engineers studying the practical details of electrical locomotion are still uncertain as to whether we shall have a separate locomotive drawing the future train or whether each car will be equipped with its own motor.

The possible speed is to be limited only by the problems of the cohesion of steel in the rails and engines. I asked Mr. Edison what, in his opinion, was the practical speed limit on the horizon of electrical locomotion, and he answered, "perhaps 150 miles an hour." He made at Menlo Park one of the first important experiments in electrical railways, exhibiting one in 1882 that carried cars 40 miles per hour. But before we come to moving heavy trains by electricity, to which there are serious, though not insuperable, obstacles, he believes that we shall shoot our mail through the country by some electrical device, of telpherage construction possibly.

But perhaps the most far-reaching results of the introduction of electrical transportation will be seen in our city and suburban railways. That was, after all, but a feeble bit of philosophy which said "time is money." For when the problems of our congested centers of population are considered, time is green fields and running brooks, fresh air, and cream and butter and eggs, it is life and health and happiness for the ill-fed, ill-housed, untaught class which our social and industrial systems constrain to exist in city tenement houses. When the fathers of such families as we now see in Mulberry and Cherry Streets can go every night to their country homes 30 miles away from work in half as many minutes for five cents, then we shall be well on our way to a signal solution of the ugliest questions of the day.

If electrical city railways will eventually help to emancipate the workman and stab anarchy under the fifth rib, they will also much more directly be doing a good deed in emancipating the street car horse, than which there is no more ill-used or degraded creature, judged by his possibilities, in the animal or vegetable kingdom, and in doing so they

will help to clean our streets and purify the heavily taxed atmosphere of great cities.

The birth of the beneficent science has brought with it an entirely new profession, and, as is well and fitting, a profession which is less than any of its older brethren, is isolated by laws of caste or need of money. It has opened an honorable, lucrative occupation to the masses, and it has aided in the century's movement toward presenting in our college courses the widest opportunities for practical and technical instruction as opposed to the old-time classical system. Never before in the history of the world have boys with dextrous hands and inquiring, logical brains had such a chance as now lies before them. And not only boys; a social good of the highest importance has come, in the field that certain delicate operations in electrical manufacture have given to women wage earners. In the Edison manufactories alone thousands of girls are using their skillful fingers and finely gauged judgment to finish the sapphire portions of the phonograph, to make and test the thread-like bamboo filaments of the incandescent light. They are more to be relied on than boys in the nice manipulation of these and other frail portions of the machinery.

Of vast economic and social significance will be the opportunity that our new systems of transportation, communication and lighting will offer to correct any mistakes that we may have made in the industries which economists call natural monopolies. Whatever we may finally decide as to the advisability of Government control of railroads and telegraphs and lighting plants, still there will be the fight, if it appears that the Government should operate these, to induce the present owners to agree with us—an almost hopeless task. But with the advent of electric roads and lights, and with such rivals of the telegraph and telephone, as Prof. Gray's telautograph may prove, the advocates of Government ownership will have their chance. This is strikingly exemplified in the history of municipal control of lighting plants, where the towns willing to undertake the responsibility of electric plants are to those that would assume ownership of gas as ten to one.

It will never be known how many lives have been saved by the introduction of electric lighting in our houses and streets in the stead of oil and gas. At first this might have seemed of dubious advantage when one heard stories of the fires which resulted from lighting wires, and the men and horses killed in trolley accidents. But since the improved methods of insulating have been applied—and it is to be expected that more and more of the dangerous wires will be carried underground—there can be no suspicion but that we have gained immensely in safety from fire. And this is of two-fold importance on trains and ships, where fire so often leads to holocausts. Railroad accidents have been lessened in another way, primarily, of course, by telegraphic dispatches, without which we can not imagine our great roads in use at all, and also in the later invention by which one can telegraph from a moving train, currents being induced in the wires running parallel to the road. It seems to a layman little short of miraculous that the sender can tick on his instrument while the Chicago "flyer," on which he is traveling, is making sixty miles an hour, and send a message by this wonderful property of induction over wires which may be so much as 500 feet away! In certain of the great railroad central offices there are charts in which all the trains at the moment in use are represented in miniature in the relative positions they actually occupy, the movements being electrically recorded. And when heating by electricity comes into general use, as it certainly will, we shall be advantaged further by immunity from the deadly car stove.

In the ocean greyhounds that are again and again cutting off the distance between Europe and America, electrical devices are of signal service in reducing the danger to life. The wearing on the ship's enormous shaft is announced, when its gets to the danger point, to the engineer by a little electric bell which tinkles automatically, the bearing having closed a circuit on reaching a certain fixed point in the shaft.

The terrible danger of collision with icebergs will be lessened through an application of that same small carbon button which registered a millionth of a degree of heat. An apparatus has already been arranged to effect this—the nearing bergs announcing their presence through the increasing cold, which the tasimeter records. Collisions and other dangers of navigation are rendered much less formidable, too, by the powerful electric search lights, equal to many thousand candle power, that disclose objects for miles about in their mighty glare.

We shall almost certainly be flying. The greatest difficulty at present in the way of that pleasing performance is the weight of the motor and fuel relative to the power necessary. The chemical production of electricity will sweep away that obstacle by making possible the construction of motors weighing but a small fraction of the lightest

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now constructed, and by effecting an even more decided saving in fuel.

As one result of the flying machine among the many which it will affect even revolutionary in character, a writer has pointed out that we shall probably be delivered from the institution of war, since such terrible destruction will be possible with a corps of fighting aeroplanes that no nation will dare to risk it.

Farming by electricity has been successfully tried in the Southern States, and it is not improbable that we shall see the agriculturist of the future sawing his wood, cutting his ensilage, shelling his corn, threshing his wheat and running his creamery with power from a small electric plant, owned in co-operation with a half dozen of his neighbors.

We should be whisking our heavy baggage, too unwieldy for the aeroplanes, through the country by electricity applied to some telpherage or other system. We shall be cooking by electricity, and heating and lighting our houses, our cars and our ships. We shall not only cook our meals; we shall probably serve them, too, to judge from an experiment made not long ago in Baltimore with much eclat.

But these methods fairly seem old fashioned beside some of the feats which our most daring electricians are considering as possible. If we hear by electricity—through the telephone—why, do these undismayed men ask, can we not see at a distance by the same agency? The vibrations of light are, to be sure, many times more rapid than those of sound; but it is merely a question of obtaining a diaphragm which will respond to these vibrations. May we not look forward to seeing, from our easy armchair in New York, the latest drama at the Theatre Francaise?

And since hearing is but a tickling of the brain by vibrations, may we not, if our apparatus for introducing these vibrations to the brain-centers gets out of order—if, in short, we are deaf—lead the impulses to the brain through the bones of the head, by electrical means?

With the problems of seeing and hearing by electricity established, there is not so wide a gap to bridge over to the idea of thought-transference by the same means. Everything they have observed leads our psychologists and physiologists to suspect that the impulses from the brain along the nerves to the muscles are, if not electric, at any rate inextricably combined with electrical phenomena. All of us know the simple experiment in our physiological lessons of making an electrical impulse act on a frog's muscles as an act of volition from the brain. If it be true that thinking is, or is always accompanied by, an electrical disturbance, why should we not be able to produce thoughts in other people's brains corresponding to our own? Mr. Edison worked on this *bizarre* problem with much earnestness. He and his assistant, Mr. Bachelor, fitted up their craniums with a coil of wire each, and connecting the two with a string, impregnated successively with various conducting substances, the thinkers thought away sturdily, testing, at intervals, the effect on each other. Many times, said Mr. Edison, their hearts were in their mouths with the belief that the connection had been established; but on laying traps for one another it was invariably found that the result was but the product of their strained imaginations.—*Review of Reviews.*

An All-important Mirror.

Exhaustive experiments have demonstrated that the parabolic glass mirror is the most perfect method for projecting the rays of an arc lamp for search-light purposes, and it not only takes up the greater part of the rays from the crater of the arc, but is also best adapted for the reflection of the most intense rays. It utilizes in the highest degree and with the greatest efficiency the useful spheric angle of the light. It seems therefore to be assured that whatever improvement may be made in search-lights in the future the parabolic mirror will form an integral portion of the mechanism of the lamp.

The strength of the current used to keep the big lamp in operation is 150 amperes at a potential of sixty volts at the lamp terminals, and No. 0000 wire is used for the conductors. The intensity of the light is something wonderful. The strength of the arc itself is estimated at 47,000-candle power, and this is magnified on the surface of the mirror to the stupendous strength of 19,000,000-candle power.

The carbons used in the lamp are placed in a direction parallel to the axis of the drum. They are fed automatically, and there is also an automatic device separating the carbons and establishing the arc, so then all that is necessary to get the full force of the light at once is to turn on the current. The positive carbon is 38 millimeters in diameter, while the negative carbon has a diameter of 26 millimeters. The lamp is very easily operated, as it can either be worked by hand, as is now being done, or by means of electric motors placed under the base of the stand, which can be operated from a considerable distance if found necessary.

FRictional Electricity.

Electric Relations of Different Substances, Electrical Machines and Electromotors. By JNO. M. BERGER, Press Secretary of Local Union No. 26.

Electricity of Machine-made Paper.

It has been long known that paper becomes electrified by friction; and the excitation of electricity in the manufacture of machine paper is not a new phenomenon, though possibly there were few proprietors of paper mills who had not observed it. (Yet Hankel was the first to describe it.) In every machine the paper becomes negative on leaving the last pair of pressing rollers. If the finger is brought near to the paper, between the finishing rollers and the reel, a spark passes from it to the paper, and a Leyden jar can be readily charged. The paper, too, which has been wound upon the reel, is electrified, and notably so when there is a large roll upon the reel. When the paper is cut off from the reel, and then long sheets are pulled apart, very strong brilliant sparks pass between them. This electricity evidently arises merely from the heating of the paper and its compression by the rollers. No rubbing friction can take place, since the velocity of revolution of all the rollers is exactly the same.

By a process similar to that used in the preparation of gun-cotton, Schoenbein has succeeded in converting paper into a perfectly transparent substance, which, by the slightest friction, becomes extraordinarily electrified, and which he employed in the construction of an electrical machine.

Such a substance must be in the highest degree acceptable to the experimenter, and it is to be regretted that Schoenbein and Boettger have published nothing further on this subject, although electrical paper is offered for sale in Berlin. In this country electrical paper is replaced by thin sheets of gutta-percha.

Now for a few words on the electricity of gutta-percha. Gutta-percha is such a good insulator, and becomes so powerfully electrified by friction, that these properties of a substance, already applied to so many uses, could not remain long unknown. (It was towards the close of the winter in 1848 that Dr. Hasenclever in his works on frictional electricity first called attention to this peculiarity of gutta-percha.) I find by experimenting that a good piece of gutta-percha insulates as perfectly as a similar piece of shellac, whether the form be that of a plate, a rod, or a mere thread, and as we all know it is tough and pliable when cold, as well as soft when warm, you will find it serves to better purpose, in many cases, than the brittle shellac. In the form of strings and bands it is an excellent suspending insulator, and we know from experience that when in plates it is a most convenient insulating support. By experimenting with gutta-percha it becomes by friction powerfully negative. I have seen it no thicker than a piece of paper and if a strip of this be taken and drawn through the fingers, it will become so electrified that it will adhere to the hand and will attract bits of paper from the table or bench at which you may be at work. All kinds of gutta-percha are not equally good insulators nor will they become equally electrified by friction. If a piece of the proper kind be cut, you will find that the surface has a resinous lustre and a compact appearance, while a piece of the poorer kind has not the same degree of lustre, is less translucent, and looks almost like a solidified cloudy fluid. Now, if a piece which conducts is heated in a current of hot air or over a low gas flame, be pulled out, folded up and then kneaded for some time with the fingers, as if to squeeze out the contained moisture, it becomes as good an insulator as the best kind.

I have taken a piece of good gutta-percha, and soaked it in water for four or five days and then exposed it to the air to see how long thereafter it would be before it recovered its insulating power and four times out of five it regained it in from ten to twelve hours.

I have taken pieces which did not insulate and found that by leaving it lay for eight or nine days

in a drying closet, that the outer layer would insulate, but after making a fresh cut in it, I found that the inside would still conduct. I found by experimenting that gutta-percha of any kind, when exposed to a gradually increasing temperature at from 170 to 180° Cent. gives out a considerable quantity of water, and after cooling insulates well.

In the next issue of the WORKER I shall speak on the electricity of rubbed glass. On the conducting power of certain substance, and on the production of electricity by steam escaping through narrow passages.

NEW YORK.

JUNE 13, 1893.

Editor Electrical Worker:

Seeing in last issue (No. 5) of the ELECTRICAL WORKER an article by Bro. Lee Briggs, entitled, "Electrical Education," I have come to the same conclusion as he has in regard to the above.

I have a few items which I feel will be of interest to some and probably of some benefit to others.

Hoping all brothers will follow a course similar to mine and bring on discussions, etc.

My first views will be confined to electric bells and arc lights.

Hoping all members will read the WORKER and correct all mistakes, I remain, Yours, etc.,

M. J. D., No. 3.

A FEW POINTS ON BELLS, ETC.

No 1. I have found that bells with hammer down give the best results.

2. Experience teaches that concealed wires, or wires going through the floor, should not be common annunciator wire, but good braided or moist-proof wire.

3. In order to save time, run all wires to one point, unless there is some good reason for doing otherwise, as in this way repairs can be easily made when searching for wires.

4. Where long runs of main wire are made, a cable of the required number of wires can be used to advantage.

5. You should never put two (2) wires under the same staple.

6. Try and conceal all wires, but in doing so be careful and do not break insulation.

7. Avoid water and gas pipes in running wires, as connections with these cause trouble.

8. Make good clean metallic contacts in all splices and connections, taking care not to burst insulations by driving staples too far and cut the covering of the wire.

9. Platina contact points are not so essential in push buttons as in bells, as in the latter the make and break are so frequent as to cause trouble soon if not used. Oxidation will take place, and no bell will work with contacts oxidized.

10. The smaller the size of the magnet the less efficiency has a bell.

11. Always use a bell that has a good swing to its hammer, and has easy working pivot points; or if it is a spring, and the spring is not so strong that it takes too much power to move the armature.

12. Always use a little more battery than is needed; better work always results in the use of more than the actual number of cells needed for a certain purpose; should a poor connection cause trouble, the battery will very often overcome the most of it.

13. Ordinarily the following will be sufficient for bell work:

100 to 300 ft....	1 cell.
500 to 800 ft.....	2 cells.
1000 to 1500 ft.....	3 to 5 cells.
Gas lighting circuits	5 to 8 cells.

14. To obtain the best results from your battery use a little time and care to keep it clean and in a cool place, and overhaul it about twice a year.

15. Dry batteries are used in a hot or very cold place, so that there will not be any evaporation or freezing.

16. Always give the use of a metallic circuit over a ground circuit the preference.

17. In push buttons see that the springs are strong and made of good, hard metal, and that they are mounted so as not to make a circuit through the outside cover, if it is also metal.

A FEW POINTS ON ARC LAMPS.

1. A clear glass globe cuts off 10 per cent of the light; light ground glass, 30 per cent; heavy ground glass, 45 per cent, and thick opal glass from 50 to 60 per cent.

2. All colors excepts drab and aniline brown can be matched by arc light, providing the arc is clear and open, and the carbon pencils free from sodine and calcium.

3. The temperature of the top or positive carbon is about 1000 degrees C higher than the lower or negative carbon. Dewar gives positive as 6000 degrees C; Kosetti gives positive 3200 degrees C and negative 2500 degrees C.

4. A carbon pencil with a soft core keeps the arc in the center and makes an excellent uniform light.

4. Generally the upper carbon is 12 inches long and the lower one 6 inches long; and a pair will last from six to eight hours, according to kind of carbon and amount of current used.

5. Hissing is caused by extreme temperatures. So long as there is any substance in the carbon more easily volatilized than the carbon, then there is not any hissing. When these are distilled from the pencil, if the temperature is high enough, then hissing takes place. Too short an arc will also cause hissing.

6. A carbon should not form several craters; if it does, then get carbon of a smaller diameter.

7. The mushroom formed on tips of negative carbons, which is so noticeable in lamps used with a small current and high voltage, disappears when the lamps are used with a larger current and lower voltage; in the latter case the disintegration of the carbons extends further from the tips than in the former.

8. Buy wire netting for arc light globes.

9. Pieces of hot carbon sometimes fly around and break the glass.

10. An arc lamp using a current of 25 amperes will not heat up a room as much as a five-foot gas burner, estimating the lights as 400 to 1.

11. See that the lamps are fastened securely, and that there are no electrical connections between them and the parts of suspension. Give them a weather-hood if out of doors, and see that wires leading to them are well insulated and that binding set screws are kept tight, as the jarring of machinery will sometimes loosen them.

12. Examine the hanger and rope from time to time, especially if the lamp is raised and lowered.

M. J. D.,

Local Union No. 3, N. Y. City.

The Weehawken Tunnel of the West Shore Railroad (in New Jersey), which is 4200 feet in length, has been fitted with a novel block-signal system, consisting of a line of incandescent electric lamps about 300 feet apart and placed on a level with the eye of the engine-driver. When the lamps are all alight it is an indication of safety; each train passing through extinguishes the lamps for a distance of 1100 feet in its rear, a result which is automatically effected by an electrically connected track-circuit, whereby the lamps are kept under the continuous control of the train. The operators in the signal towers at each end of the tunnel can also extinguish the lights in any section of the tunnel if occasion requires. This system appears to embody a number of exceedingly valuable features, and, if successful in practice, can not but increase the traffic capacity of a long tunnel largely beyond that which is possible by the methods of signalling heretofore in use.

A small incandescent lamp about the size of a pea is found extremely useful in the diagnosis of certain diseases. Placed in the cavity of the mouth it illuminates the face from the interior and makes it possible to see all the muscles and blood-vessels with the utmost distinctness. By attaching the lamp to a tube it can even be lowered into the stomach, the current turned on and an examination made from the exterior.

Laboratory Diamonds.

The fond hope of the alchemists, the transmutation of the baser metals into gold, has nearly faded from the minds of men, but the assiduity of the chemists in their efforts to imitate artificially the beautiful products of nature was never greater. Since Lavoisier and his associates, in 1872, proved that the diamond is only a form of carbon, many efforts have been made to produce it artificially, by the transformation of some of the more common forms. These efforts have met with varying degrees of success. Several experiments have produced the black diamond, but only once before has the crystallized, transparent variety been produced. This was accomplished by Hannay, but his method involved physical arrangements difficult to meet, and has not been pursued.

M. Moissan has now announced a new method for the artificial production of the diamond. It has long been thought that if the ordinary forms of carbon could be converted into a liquid or gas, that they then might be made to solidify as diamonds. But there is no way known of directly converting carbon into a liquid or gas. Moissan took advantage of the property possessed by melted iron of absorbing and diffusing carbon throughout its mass. He saturated the highly heated iron with carbon by infusing into it a quantity of purified sugar. By suddenly cooling the melted metal, he formed a sudden crust over the still liquid interior. As the mass continued to cool, the interior gradually solidified, but it was prevented from expanding by the rigid exterior.

The interior was thus compelled to solidify under enormous pressure. During the process of hardening, the carbon solidified, in part, as diamond, instead of graphite, as is usually the case in the cooling of melted iron.

The quantity of diamonds thus produced, was small, and the crystals themselves were small, but they were clear and transparent and seemed to possess all the beautiful properties of the natural gems. The experiment has already excited the curiosity and interest of many people, and the simplicity of the method will probably induce many to attempt the production of the precious stones. It is, however, safe to predict that much time and labor will yet have to be expended before marketable-sized jewels can be produced.

The scientific import of the discovery is, however, great and of immediate bearing. It is an important success in the efforts of scientific men to reproduce the rarer of the natural mineral products. The diamond, ruby, quartz, feldspar, mica, pyroxene, hornblende, have all been made in the laboratory. The experiments are very suggestive as to how the same minerals were made in nature. Moissan's experiment throws strong light on the condition of the carbon in the melted iron, a question of great practical import. Finally, the discovery suggests additional information as to the processes going on beyond our earth, which sometimes sends meteorites to us laden with diamonds; within the earth, by which reservoirs may be filled with natural gas. The discovery widens the field for the transformation of matter and increases, as well, possibility of interpreting the secrets of the mineral world.

SAMUEL E. TILLMAN, Col. U. S. A.

Fires Caused by Electric Currents.

A series of questions designed to elicit the facts regarding the number of fires caused by electric currents, and the resulting losses, as compared with the total number of fires and losses from all causes, in the same cities, has been addressed to the Chief Engineer of the Fire Department in each city which contained more than 20,000 inhabitants at the census of 1890. The object of this step was to ascertain the truth regarding the danger of fires which attends the use of electricity. Reports were received from about one-half the cities coming within the scope of the inquiry, but only sixty of the reports are so complete in details as to be available for tabulation. These give, for each city, (1) the total number of fires from all causes, (2) the losses resulting therefrom, (3) the number of fires attributed to electric currents, and (4) the losses sustained. The reports tabulated are from all parts of the country, and from cities ranging in population from 20,000 to over 1,500,000 of inhabitants, five having over 400,000, five from 100,000 to 400,000, ten over 50,000, and fourteen under 25,000 and over 20,000, representing an aggregate population of more than 6,750,000. The totals of the tables show that there were 17,095 fires from all causes in the cities named during the year and that the losses amounted to \$22,781,532.91. Two hundred and three fires, with \$281,241.06 of losses, are attributed to electricity, which is thus shown to be responsible for 1.19 per cent of the fires and 1.23 per cent of the losses, or about one

fire in each eighty-five and less than \$1.25 of each \$100 of losses. Considering merely the fires caused by electricity, it is found that New York City, with fifty-nine fires, heads the list, followed by Boston (twenty-six), Cleveland (sixteen), Lowell (twelve), Minneapolis (eleven), and Philadelphia (ten), in the order named; the remaining cities having experienced less than ten fires each during the year. But in average loss per fire Rockford, Ill., with five fires, takes the lead, having sustained losses aggregating over \$37,000, or \$7527.50 per fire; Minneapolis being second, with an average of \$5827.85. Then comes Boston, \$3662.12; Lynn, a single fire, \$3000; Topeka, \$1790.10, and New York, \$1188.40, the last of the cities in which the loss per fire was over \$500; fires in other cities ranged from \$5.62 in Cleveland to \$493.50 in Memphis.

Artistic Electro-Plating.

For many years past electro-platers have sought to evolve an effective process of electro-deposition on a non-metallic case. This endeavor was at length attended with partial success, but the process was accompanied by so much danger, in consequence of the highly combustible nature of some of the agents employed, the manufacturers did not care to run the risk of setting their premises on fire. A modification of the process has been discovered by which this danger is avoided, and the invention is now pronounced to be one of the most important that has been introduced in the electro-plate trade for many years. The object to be dealt with, whether it be a sprig of natural holly or ivy, a bit of common hedge briar, a fern, geranium leaf, Marguerite daisy, a terra-cotta group, or a piece of delicate lace is first submitted to the process, which is the inventor's secret. It next receives a deposit of copper, which renders it perfectly ductile and practically indestructible, and then it is ready to be either silvered or gilt by the ordinary process of electro-plating. This invention comes from England, where it is being used largely in ornamental work of various kinds. Some of the effects produced by it are said to be exquisitely beautiful. For instance, cracker, glove and trinket boxes and drinking cups are twined around with sprays of ivy or holly, the veining of the leaves and the sharpness of the prickly edges of the holly being as perfect as they were in their natural state. To other articles lace is added in a similar manner, and while all the delicate gossamer appearance of the lace is preserved, its character is so changed that it has become metallic, and may be removed whenever the article which it embellishes requires cleaning. In every instance, the ornament is attached by screws, instead of solder, for facility of removal. In the same way the ornamentation is applied to the backs of hair-brushes, and an infinite variety of other articles, the material used being natural leaves and flowers. Terra-cotta ware can be treated by the same process, and when bronzed make attractive ornaments, which can not readily be broken.

Probably the most extensive electrical outfit in the world, employed solely for mining operations, is that of the Calumet and Hecla Company in the Lake Superior region. The plant has been some two years in course of construction and comprises nearly every known form of electrical apparatus. There is, among other things, a complete telephone exchange, connected with which are many miles of telephone and telegraph lines, both above and below ground. Both alternating and direct currents are used for illumination, with voltages ranging from 52 to 1000. Large numbers of pumps, cranes, hoists, etc., are operated with electricity with great facility and economy. The safety and flexibility of electricity seem to render it almost an ideal agency for applying power in the varied and difficult operations connected with the mining industries.

An immense electrolytic copper refinery has been started at Great Falls, Montana, by a Boston company. It comprises 288 depositing vats capable of containing at one time 1,600,000 pounds of pig copper anodes, and has a capacity of 1,200,000 pounds of pure electrolytic copper per month. The plant is run by water power situated at a distance of 2100 feet from the works. The current is supplied by two dynamos of 165 kilowatts capacity each. The total cost of the plant, exclusive of real estate, is said to have been over \$350,000. The metal refined contains a large per centage of silver, all of which will be saved by the electrolytic process.

An electric street railway is now in successful operation in Bangkok, Siam, the rolling stock and station machinery of which are entirely of American manufacture.

AUG 1893

[August.

THE ELECTRICAL WORKER.

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GENERAL NEWS.

Where Electrical Workers May Look for Work.

LINWOOD, OHIO.—Will soon have an electric light plant, arc and incandescent. J. L. McClure President of company.

LUDLOW, KY.—Is talking of putting in a city plant. J. C. Richardson, city clerk.

YPSILANTI, MICH.—Sidney Rathbun has sold the equipment and franchise of the Ypsilanti horse-car line to James L. Hill.

CARBONDALE, PA.—The Crystal Lake Street Railway Company, capital, \$50,000, has been chartered to build a line between Carbondale, Lackawanna County, and Dundaff, a distance of seven miles. C. D. Simpson, of Scranton, President.

NORTHAMPTON, MASS.—The Electric Lighting Company will put up a new plant having a capacity of 4000 incandescent lights and 220 arc lights. It is stated that the new machinery will include a 500 h. p. compound condensing engine, three vertical boilers and several dynamos.

LANCASTER, PA.—An electric light plant will be put in by the Citizens' Electric Light, Heat & Power Plant after plans prepared by C. Emlen Urban.

NASHVILLE, TENN.—The Nashville Railway & Electric Power Company of this city applied to the Secretary of State for an amendment to its charter to enable it to construct and operate a line of street railway on Cherry Street and Spruce Street, and there connecting with the line of railway heretofore built and operated by the company.

CLEVELAND, TENN.—A local syndicate has been granted a franchise for an electric light plant in Cleveland. While the city has made no definite arrangements to be lighted by electricity, still the plant is to be erected, trusting for a general patronage.

ROCK FALLS, ILL.—A committee has been appointed consisting of two aldermen and the City Attorney, to investigate the feasibility of putting in water and electric light plants.

LOOMIS, WASH.—Arrangements are being made to build an electric plant to be run by water power and to furnish power for milling, drilling, tramway and lighting purposes.

COTTAGE GROVE, ORE.—The town voted to issue bonds for an electric light plant. Work will commence as soon as the bonds are sold.

MILLVALE, PA.—Bids will be received by the Borough of Millvale until Aug. 14, for the construction of an electric light station in connection with the water works plant. Plans may be seen at the office of Engineer J. Schinneller, McClintock Building, Market street, Pittsburg, Pa.

ST. LOUIS, MO.—Plans for the tracks of the Delmar Avenue and Clayton Electric Railway were submitted to the Board of Public Improvements. This means that the work on the road will commence soon.

YOUNGSTOWN, O.—The Youngstown and Canfield Electric Railway and the Louterman Land Improvement Company, composed of Pittsburg capitalists, which have been projecting an electric line here, held a joint meeting here and agreed upon terms of consolidation that were mutually satisfactory.

GREEN BAY, WIS.—Work on the Green Bay & Ft. Howard has been suspended owing to the inability of the promoters to secure necessary funds to complete the road. The tracks have been laid and the wires strung, and all that was lacking was to secure the cars and to finish the power house.

TORONTO, ONT.—Bids will be received until August 15th, for an electric plant at Mimico Asylum. C. F. Fraser, commissioner, department public works, Ont.

MOORESVILLE, IND.—A movement is on foot here for an electric light plant.

DAYTON, O.—The Hospital Building is to have some electrical work and wiring placed in same.

AURORA, ILL.—Is to have another 50-arc light dynamo for city lighting.

PLAINFIELD, N. J.—The electric light plant here is to be doubled in capacity.

BATAVIA, N. Y.—Has asked for bids and will soon have an electric light plant in connection with their water works. Geo. E. Perrin, Clerk.

BROOKLYN, N. Y.—Mayor Boyd has signed the resolution granting right on 20 miles of streets to the Broadway Railway Co., and he also approved the resolution changing the motive power from horse to electricity.

COLUMBUS, O.—Ask for proposals for street railway. John M. Dom, city clerk.

PORT TOWNSEND, WASH.—A franchise has been granted authorizing the Townsend Gas & Electric Co. to construct and operate an electric light and power plant. W. H. Merrick, City Clerk.

LA CROSSE, WIS.—The council will appoint a committee to investigate the plan of the city having its own electric lighting system.

ELGIN, ILL.—V. W. Panton of S. Elgin has presented a petition to the council for an ordinance to run an electric light plant here. He makes a proposition to the city to furnish light from power at S. Elgin, and says he can do so at a price which will cut the present or any recently offered figures in two. The power would be principally water, and a boiler would be held in reserve. For that reason the light could be produced very cheaply.

MOUNT VERNON, N. Y.—In consideration of the financial stringency which has prevented the Union Electric Railway Co. from getting funds, the Common Council has decided to give another hearing to the company on Aug. 22nd, in the matter of extending the time for completion of the road.

BORDENTOWN, N. J.—John Wiley of Moorestown, Burlington Co., N. J., is in the city calling upon members of the Common Council relative to the privilege of erecting an electric lighting plant in the city.

TOLEDO, O.—Notice is hereby given that the Board of Commissioners of Lucas County will receive sealed bids until Aug. 29th, for the work of remodeling the steam heating, electric light and laundry plant of the Lucas County Children's Home. The total cost of the said improvement is not to exceed \$3300. Chas. M. Jones, County Auditor.

DAVENPORT, IA.—The Peoples' Gas Light & Construction Co. is seeking franchises.

MT. CARROLL, ILL.—Mt. Carroll is agitating the question of voting to issue bonds for the purpose of erecting an electric light plant.

SANTA CRUZ, CAL.—The Santa Cruz Electric Navigating Co. of Santa Cruz, capital stock \$10,000, with W. F. Swanton, James McNeil, John T. Sullivan, F. W. Ely, J. G. Tanner, W. T. Jeter and A. P. Swanton as directors.

TACOMA, WASH.—The Big Bonanza Mining Co., capital stock \$10,000,000, principal place of business will be in Tacoma, and the company is empowered to mine and mill precious metals, separate ores by the electric process, and do anything in the mining business. E. H. Lewis, W. F. Sargent, F. C. Miller, S. Ryder, L. W. McKeehan, L. E. Rice.

MILWAUKEE, WIS.—The Wisconsin Electric Dynamo Co. filed articles of corporation with the register of deeds; capital stock \$50,000. The officers are F. H. Brockmann, First vice-President; G. Podoll, President; John M. Brandmueller, Secretary. The company, will build dynamos at Layton Park.

CANTON, ILL.—Canton City Railway Co.; capital \$100,000; John M. Snyder, C. H. Martin and C. N. Henkle.

WOONSOCKET, R. I.—Plans for the new building of the Woonsocket Electric Machine & Power Co. have been perfected and work of construction will soon begin. The building will be of brick and two stories high; to contain 5 stores and 6 offices and to be heated by electricity.

FLEMINGTON, N. J.—Messrs. Lieber & Weiler, who have been granted a franchise to construct an electric lighting plant here, have made a canvass with such success that they will begin work on their proposed plant as soon as a location can be selected.

WOODSTOCK, N. Y.—Overlook Mountain House near here is being improved and the firm in control, Messrs. A. A. Neal & Co., are forming a syndicate to build an electric road from the base of the mountain.

YOUNGSTOWN, OHIO.—A movement is on foot here by which two electric railways will probably be built in a short time, running from the city to Lauterman's Falls. Judge Johnston and Z. Cal Ewing are interested.

CLEVELAND, OHIO.—The Cleveland Electric Light Company are about to increase largely.

BOSTON, MASS.—The city buildings at Austin and Pearce Farms are to be lighted by the electric light.

ST. LOUIS, MO.—The St. Louis & Kirkland Electric Railway asked for articles of incorporation. The company will open a line from Forest Park to Meramec Highlands. Capital \$100,000. Directors, John Pittman, Geo. D. Edwards, Geo. W. Taussig of Kirkwood and others.

SEATTLE, WASH.—Franchise has been granted to Guy C. Phinney for a street railway along and over certain streets and avenues from Yesler Avenue and Fourth Street to Woodlawn Park.

STILLWATER, MINN.—For nearly two years the Stillwater Electric Street Railway has been in the hands of a receiver. W. M. Hewitt is receiver. The property is valuable, and the Stillwater people trust that some one will get it when the sale takes place that will handle it correctly.

JOLIET, ILL.—The Penitentiary Commissioners and Warden Allen have rejected all electric light bids for the electric plant at the prison, and will make arrangements for new bids, although it is thought that they will not advertise for bids again.

ALAMEDA, CAL.—The City Trustees propose to sell to the highest bidder a franchise for operating a plant for electric lighting and power in this city, and have had the necessary resolution prepared that will call for bids. The franchise will be sold for a long term of years and makes certain limitations in granting the privileges. The city will require that all city offices and the proposed new City Hall be lighted by electricity and without expense. It will be a franchise for an incandescent system for commercial purposes. The proposition does not meet with the approval of all the citizens. The Citizens' Committee, composed of W. M. Cubery, G. R. Read and B. R. Allen, states that with the expenditure of \$10,000 a suitable incandescent system can be added to the present municipal electric light works by which commercial lighting may be furnished the resident at a nominal figure.

MOUNT CARROLL, ILL.—A petition praying the City Council to call a special election to allow the people to express whether or not it is their desire to bond the city to build an electric light plant, is being circulated and everybody is signing it.

EUREKA, ILL.—The Eureka Brick, Tile & Electric Light Company has been incorporated, with a capital stock of \$50,000, for the manufacture of brick and earthenware and to operate an electric plant. Jas. M. Deck, W. S. Allen and N. B. Crawford.

MT. VERNON, N. Y.—The Board of Aldermen have refused the application of the Union Electric Railway Company for an extension of time in which to complete their road from Fordam through here. President Edward Maher then withdrew from the meeting without filing the bond promised by the company.

HINGHAM, MASS.—Fred. M. Hersey, Morris F. Whiton, Summer Cushing and Geo. W. Burr are the committee in the matter of the proposed electric lighting plant for Hingham, Mass., to pay for which \$50,000 will be issued.

BAYONNE, N. J.—A petition is being circulated among the business men here to induce the Council to grant a franchise to the Bayonne City Rapid Transit Co. The Jersey City & Bergen R. R. Co. has a line along Avenue C, one block from Avenue D, along which the Bayonne City Rapid Transit Co. propose to build. The latter company is an applicant for permission to substitute the trolley system for horses as motive power.

BUFFALO, N. Y.—The Buffalo & Niagara Falls Electric Light & Power Co. will soon call for bids for the construction of its plant here, main building to be 40x30 feet.

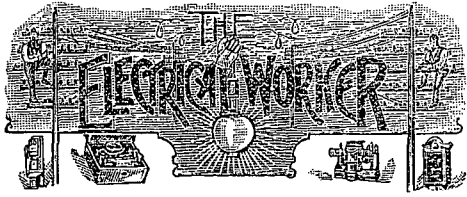
HUDSON, N. Y.—The Hudson Electric Railway Co., through Pres. H. McGonegal, has applied for leave to extend its road within the limits to the northerly line of the city.

PATERSON, N. J.—Among the directors of the New Jersey Improvement Co., which are soon to build a 40-mile trolley road from here to New Brunswick, are Jacob L. Stadlerman, of Bath, Pa., and Chas. E. W. Smith of Morristown.

OYSTER BAY, L. I., N. Y.—The Oyster Bay Electric Railway and Power Company has increased its capital stock by \$10,000, and will increase its plant by a new dynamo, also increase its steam power.

ATCHISON, KANS.—The *Atchison Globe* states that Edward Morton & Co., who will buy the Atchison Street Railway and use electric power, are bankers and brokers of New York. They will also operate an ice manufactory in connection with the power house. All they ask is that the city donate a site for the power house and ice manufactory. The editor of the *Globe* has seen the letter in which they offer \$35,000 in cash for the present plant.

SPRINGFIELD, O.—The County Commissioners have granted a franchise to J. N. Neff and his associates for an electric line between Springfield and Xenia. Mr. Neff states that the work will be commenced immediately. Bids will be called for ties, etc.



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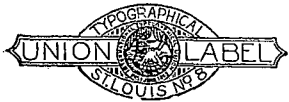
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As THE ELECTRICAL WORKER reaches the men who do the work, and recommend or order the material, its value as an advertising medium can be readily appreciated.

St. Louis, Mo., August, 1893.

Advertising Rates on Application.



FROM our 63 locals, scattered over almost every State in the union, we have received intelligence that the electrical trade is almost at a standstill. From present appearances of the money market and the utter stagnation of general business, the coming winter will probably be the severest known for many years and if the weather proves as black as the financial horizon the poverty and suffering will be great indeed.

Under these circumstances it behooves every brother to keep his expenses down to the lowest limit, to hold his job as long as possible, to avoid differences of all kinds, as it will be almost utterly impossible to make any advance in wages or shorten the hours of work in any branch of trade this winter.

Therefore, brethren, save your money, be economical, and do not throw up your job at the least provocation—remember there will be hundreds looking for it and

"He that will not when he may,
When he will he shall have nay."

EACH member of a union, whether an officer or not, should take a personal interest in the affairs of the union. A number of unions fall in arrears and when notified from the general office, the members seem surprised, and say they thought all bills were paid. Some officers are incompetent, others indifferent, and still others dishonest. While we are happy to state the latter class have been few, still the demoralization and injury they have caused to their unions will last for some time. The members should insist that the officers report at each meeting and that the trustees bring in a full report each quarter.

Some unions have not paid their assessment for the journal yet, while very few have paid all. A

number of unions keep as far in arrears as possible without being suspended. By depriving the general office of the use of this money the work of the organization is greatly retarded. Let each member be prompt in paying his dues to his local, and each local be prompt with the general office, and much better results can be accomplished.

THE subscription price for THE ELECTRICAL WORKER to members of the Brotherhood has been too low to place the paper on a paying basis. There is a large deficiency now and this deficiency will increase with every issue. This has necessitated using money from other funds, which has greatly impaired those funds, and the money should be replaced as soon as possible. We hope that each member will make a strenuous effort to secure subscribers and advertisers for THE ELECTRICAL WORKER. If each member would secure a single subscriber, it would place the paper on a sound financial basis and double its usefulness. The good accomplished by THE ELECTRICAL WORKER can not be estimated in dollars and cents. While we have been handicapped in a dozen different ways, we have tried to make the E. W. a credit to the great organization it represents, as well as one of the leading trade papers of the country. We extend our sincere thanks to all who have assisted us either by contributing articles or securing subscribers, and hope that they will continue their efforts in the future.

PERSONAL.

The members of Local No. 12, Evansville, wish to warn the brotherhood against O. May, formerly belonging to their union.

Anyone knowing the present whereabouts of Brother Patrick Creegan, formerly a member of No. 9, will confer a favor by sending his address to this office.

The St. Louis colony in Brooklyn report having a good time. Brothers Lafferty, Gent, Hedden, Baird and others have written long letters to their Western friends about the beauties of the City of Churches, and the pleasures of an afternoon spent at Coney Island. No. 34 can be congratulated in acquiring so many able members.

We have had the pleasure during the past month of receiving calls from brothers from all parts of the country. Some were going north, some east, some south and some west, but all were enthusiastic for the Brotherhood, although their pockets were empty, and their face wore an anxious look. Don't be discouraged, boys, there is a silver lining to every cloud, Congress to the contrary, notwithstanding.

Burt Halbert, a member of the old Wiremen's and Linemen's Union of St. Louis, was in the city last week. He is as much of a sport, dude and masher as ever. He has been traveling extensively for his health, stopping occasionally to install a plant. He will soon be located in St. Louis again and No. 1 can count on another member. He is quite a poet and an expert at wrapping papers. Call again, Burt, when we are mailing.

Brother James Kane of No. 18 dropped in to see us this week. Brother Kane is one of the oldest linemen in the business, having worked for nearly thirty years through the western country. He was one of the originators and mainstays of the U. O. L., and is just as enthusiastic now for the Brotherhood. He is on his way east to visit his old home, and will also visit a number of locals, and our brothers in the effete East will, no doubt, listen with interest to his stories of life on the plains when the first lines were carried across the continent.

While recently in Des Moines, Ia., we had the pleasure of meeting a number of representative electrical workers, and as usual we met men there from all parts of the country. No. 55 can be con-

gratulated on having such an able staff of officers, and such intelligent members. Brother J. C. Trailkill, the genial president, is ably assisted by Brothers Mark Caster and J. M. Graft, the recording and financial secretaries. No. 55 has also an inventor of some note among its members, Brother Oliver Dean, who has secured a patent on an automatic fuse box.

Brother W. Lintern of No. 16 has found time during his spare moments to write a very useful little book on the management of street car motors. The book explains fully the different technical terms used, and gives detailed drawings for wiring cars and connecting up motors for all the leading systems. Also how to test a motor and locate trouble and remedy the same. As this is the first book written by one of our members, we hope all Brothers interested in street car work will show their appreciation by ordering one of the books, as the information to be gained will many times over repay for the small amount invested.

Ansonia Electric Co.'s Club Room.

The Ansonia Co. have been sending out thousands of handsome card invitations to people visiting the World's Fair, asking them to call at their club rooms and make themselves at home. On our last trip to Chicago we took advantage of this invitation and through the genial chaperonage of Mr. A. E. Richardson were shown through their elegant rooms. Handsome carpets, rich furniture and decorations, pleasant lounging chairs and sofas invite the wearied traveler to make himself comfortable. A reading room containing papers from the principal cities and complete files of electrical journals, a writing room with every convenience, a ladies' room with an elegant piano, and smoking, billiard and retiring rooms are all at the disposal of the visitors.

On their register can be found the autographs of many that are well known in electrical circles who have availed themselves of the Ansonia Co.'s hospitality.

The witnesses who have given testimony in the recent investigation respecting the efficiency of the Boston Fire Department seem to be unanimous in the opinion that the operations of the firemen at large fires have often been greatly impeded by the lines of over-head electric wires in the streets. The chief of the department observed that the telegraph wires have caused the firemen far more trouble than street-railway wires.

An ingenious automatic switch is now applied to the electric lamps in the guests' room in a hotel, whereby the locking of the room door from the outside (but not from the inside) turns off the lights. Many inventors, it seems, doubtless with the philanthropic idea of helping the business of the local electric-lighting company, are accustomed to leaving the lamps burning at full head when they vacate their rooms.

The possibilities in the way of the economical distribution of power by electricity, which have been demonstrated by the continued successful operation of a number of large enterprises of the kind, are giving a renewed impetus to the construction of hydraulic works of great magnitude. One of the most interesting of these is the great dam across the Colorado, just above Austin, Texas, the completion of which has recently been celebrated. The dam is of masonry, 1125 feet long, and raises the water sixty feet above its original level. The flow of water is said to be from 200,000 to 250,000 cubic feet per second. It is designed to utilize the power for a pumping station, various factories and mills, together with a system of electrical distribution which will make cheap light and power available anywhere within a radius of several miles.

You

Can obtain a large, handsome Burlington Route map of the United States, mounted and suitable for the home or office, by sending 15 cents in postage to

D. O. Ives,
Gen'l Pass. and Tkt. Agt.,
St. Louis, Mo.

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THE ELECTRICAL WORKER.

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NEW BOOKS.

NOTE BOOK OF WIRING TABLES, BY THOS. G. GRIER, CHICAGO, 1893; 64 PAGES, 36 TABLES; PRICE, \$1.00.

This little book, made up in convenient size for the pocket, is one of the best that has yet come under our notice. It not only gives ready tables for wiring, but in addition gives plain, simple rules for ascertaining the size of wire to be used for any voltage, for any number of lamps, to any distance. Also rules for figuring size of wires for motor service.

Unlike most other books of a similar nature, this book is free from complicated formulas that so often perplex those who have not had an extended course in the higher mathematics. This book should be in the hands (or pocket) of every wireman in the country, and can be obtained direct from the author at Chicago, or by sending to the office of the "ELECTRICAL WORKER," St. Louis, Mo.

"THE MOTORMAN'S HAND-BOOK," BY WM. LINTERN, CLEVELAND, OHIO; PRICE, 75 CENTS; FOR SALE AT THIS OFFICE.

A book giving detailed information, and drawings, of the method of wiring street cars for all the different motor systems. By studying this hand-book any motorman should be able to tell just what the trouble is when he finds his motor working badly, and how to remedy it.

The author of this hand-book is a practical motorman and a member of Union No. 16, of Cleveland, Ohio.

"PRACTICAL DYNAMO BUILDING," WITH DETAIL DRAWINGS AND INSTRUCTIONS FOR WINDING ARMATURES AND FIELDS, ALSO GIVING SIZES OF WIRE AND DIMENSIONS OF IRON, &C., &C., BY L. C. ATWOOD, SUPERINTENDENT OF THE ATWOOD ELECTRIC MANUFACTURING COMPANY, ST. LOUIS, MO. PRICE, \$3.00. PUBLISHED BY THE B. ROTH TOOL COMPANY, ST. LOUIS, MO., OR CAN BE HAD BY ORDERING FROM THE "ELECTRICAL WORKER."

In compiling this work Mr. Atwood has endeavored to place before the public a book containing all the necessary information to enable any ordinary mechanic, and in fact, almost any amateur, to build a practical working dynamo of any of the sizes for which he has given the drawings and instructions. The book contains all details for building different sizes of dynamos from four lights up to 150 lights, incandescent, and also a one light arc dynamo. One of the noteworthy points to be mentioned in connection with this book is the fact that all of the different sized dynamos given have actually been built from the drawings as given in this book, and we know that they are practical working machines in operation in this city at the present time. We believe this particular book is just what a great many amateurs have been looking for, and also that many engineers will find in it the desired information to help them build that dynamo they have so long had in mind, or to repair either a Siemens or Gramm Armature they may now have in their charge.

A neat little pamphlet of 50 pages is the price-list recently sent out by Mr. W. R. Brixly, manufacturer of Day's Kerite Wire and Cables for electrical purposes. The lists contain much information regarding wires, such as sizes, weights, resistance, safe carrying capacity, etc.

Cushing & Morse, general western agents, 225 Dearborn St., Chicago.

You

Can obtain a pack of best quality Burlington Route playing cards by sending 15 cents in postage to

D. O. IVES,
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St. Louis, Mo.

TRADE NOTES.

The Schultz Belting Co. have just shipped a large order to Australia, and are very busy getting out orders for the rest of the world. Not satisfied with belting the earth and moon, they are now after the Planet Mars and their ambition will probably reach after the whole solar system.

The Ansonia Electric Co. keeps the ball rolling, despite the close time. They have an advertisement in this issue of interest to every lineman or electrical worker. They offer genuine Stubbs pliers and electricians' scissors at a fetching price. However, the ad. explains itself.

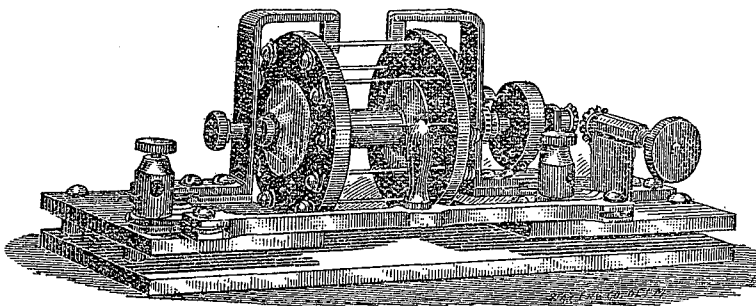
John Beegan, of 228 S. Halstead St., Chicago, is very busy just now getting ready banners and other paraphernalia for the Labor Day parades. He has just finished a magnificent banner for Local Union No. 9 of Chicago, and the boys expect it will win the \$100 prize for the best banner.

No better evidence of the standing and sterling features of the Ansonia Electric Co.'s specialties could be had than from the number of propositions that are being made them by foreign companies through their representatives, who are visiting the Fair, they appreciating in particular the value of the Wirt Indicators, Wirt Brushes and W.-W. Lightning Arresters, of which the Ansonia Co. are sole manufacturers.

Messrs. McLean & Schmitt, of Chicago, who make a specialty of armature work, are installing at John York & Co.'s new store, on South Halstead Street, a lighting plant consisting of 125 arc lamps of 2000 C. P. each, and 250 incandescent lamps. There will be one 30 light and two 50 light dynamos. The installation is for the Excelsior Electric Company of New York City, whose apparatus is used throughout, except the wire, which is Simplex. The Excelsior Company make a very nice exhibit in Electricity Building, and also have 300 arc lamps in Horticultural Hall and several in the Transportation Building.

The Dean Fuse Carrier.

The Dean Rotary Fuse Carrier is designated to save time and expense by automatically replacing a new fuse where one has been blown. By referring



The Dean Fuse Carrier.

to the cut it will be seen there is a small circular receptacle at the right of the fuse carrier spool, and attached to an upright metal support, this support being in its continuation one end of a circuit, and making its complete circuit to the other contact end by way of the fuse strip as shown. The circular receptacle contains a spring and is attached to the same shaft that carries the fuse strip spool, the strips of which are thereby kept pressed against the contact ends of the circuit as shown. When in position, should a fuse blow, the spring referred to would at once turn the spool and carry a new fuse strip up against the contact ends, thereby closing the circuit automatically. If, at any time, it should be desired to open or close the circuit, independently of the fuse carrier, there are switches to enable the same to be done, thereby meeting all the requirements that could possibly happen. This apparatus will be mounted on a fire proof base and will also have a porcelain spool to hold the fuse strips, instead of the disks now used. Manufactured and for sale by The Dean Electric and Manufacturing Company, Des Moines, Iowa.

FREEPORT, ILL.—The building of the Freeport electric lines has been delayed by the state of the money market, but Congressman Haines promises to start August 15th, if the franchise is extended, and the City Council has voted to extend it.

Electrical News.

GALLATIN, O.—Gallatin is in need of an electric light plant, and there is prospects of one being located here soon.

GARDNER, MASS.—The Gardner Electric Street Railway Company has been granted a franchise for an electric street railway here, and the capital stock is \$75,000. J. Walter Davis, L. A. Greenwood and G. R. Godfrey.

ATCHISON, KAN.—The Atchison Railway & Electric Light Company has been incorporated with a capital stock of \$250,000. Edward Horton of New York, A. J. Harwi, B. P. Waggener and others of Atchison.

A charter has also been granted to the Tucson Water, Electric Light and Power Company, whose headquarters will be at Atchison, with a branch office at Tucson, A. T. It will operate at Tucson. The incorporators are Sylvester Watts, Henry A. Lawton, Terry Parker and others of Atchison. The company has a capital stock of \$50,000.

MOLINE, ILL.—Proposals will be received by the undersigned at the office of the City Clerk, in Moline, until 7 P. M., of August 21st, for the purchase of the city's electric light plant, consisting of engine, shafting, pulleys, belts, etc., dynamos, lamps and lamp hangings, poles, wires, etc., now used in lighting the streets of the said city. Also bids will be received at the same time and place for lighting the streets of said city for a term of years with 120 to 150 standard 2000 candle-power arc lights. For full details see city clerk or chief engineer. W. A. McBeth, chairman of committee.

NOBLESVILLE, IND.—The Chicago & Central Indiana Electric Railway Company has placed an order for 500 miles of steel rails to be used in the construction of their roads, this being the largest single order for steel placed for years. They also placed the order for a 500-horse power compound engine, to be used in the car works to be built at Noblesville, where all the cars and equipments will be manufactured and repaired. The road will have a double track from Indianapolis to Chicago via Noblesville, Frankfort and Lafayette, Ind. At Noblesville there will be erected a large car works, the main building of which will be constructed of brick, be 60 feet in width and 1,000 feet in length. In these shops will be manufactured and repaired the cars, machinery and appliances for the equipment and operation of the entire system.

From Noblesville single track lines will be constructed in such a manner as to bring the entire gas field into close and direct connection with the main lines and Chicago; thus the great Indiana gas field will have direct and cheap transit for both passengers and freight to and from Chicago. The roads will be equipped for both freight and passenger traffic. The passenger coaches will be 40 feet in length and

equipped with every convenience and comfort known to the management. The roads will be built standard gauge, and it is proposed to run at a rate of speed that will solve the question of rapid transit. The single tracks will be from Noblesville to Muncie, via Anderson; from Noblesville to Fort Wayne, via Marion; Noblesville to Peru and Logansport, via Tipton and Kokomo. Thus a network of road brings the whole traffic of the gas towns of Indiana into close communication with a common center, and that center into direct communication with Chicago and Indianapolis. The topography of the country traversed is such as to make it really inviting for the operation of such a system, and the agricultural and manufacturing interests have grown to such proportions as make sure a patronage that will prove remunerative to the company. While some of the chief officers of the company are of Chicago, and they have offices there, they also have offices at Noblesville, which are being fitted up in a manner that indicates a purpose of going earnestly ahead with the work they have undertaken. A contract has been made with James Yule for the construction of their double track line between this city and Indianapolis. A large force of hands will be at once put on the work, and no time will be lost in the construction and equipment of this part of their road, which will at once be fitted with the latest and most improved equipments, and as soon as this line is put into operation they will at once proceed with the construction and equipment of the double track line to Chicago. They have also closed additional orders for large quantities of materials, equipments and machinery, to be delivered at an early day.

K.

CORRESPONDENCE.

[The Press Secretary, though an officer of the Local Union, is really a resident correspondent of the ELECTRICAL WORKER, and should keep his paper thoroughly posted on all matters pertaining to the electrical industry in the vicinity he represents. New plants, extensions of old ones, new electric roads, state of trade, new ideas, electrical novelties and accidents are a few of the topics to report on. Please notice that the minutes of the meetings are not required, except the report of new officers, and such matter as may be of general interest to all members.]

ST. LOUIS, MO.

AUGUST 8TH, 1893.

Editor Electrical Worker:

As a kicker I am fast coming to the front and will soon be ranked with the beautiful bird Josh Billings describes so perfectly as having two legs to stand on and two to kick with; I have but two legs but can kick with both. As it is impossible to have uninterrupted harmony on this earth we must be prepared for the discord.

There is a great lack of enthusiasm in Local Union No. 1. All are willing to receive the good acquired but so few are expected to carry the burden. A number of the brothers if asked who the officers of the union are could not tell. They do not attend the meetings often enough. Every brother should know the financial standing of the union and if an appropriation should be suggested he then could give his views on the matter. I hear a great deal of talk after the meetings that should be done during the session. Brothers complain when too late. If they were looking to the interest of the cause they would see the disadvantage any movement would place the union in and rise and speak right out in meetings. Say your say at the meetings and use every effort to defeat any motion that you conscientiously think an injury to our noble cause. If you can not express yourself before an assemblage tell some brother that has the gift of gab and he will do your talking. If we were all of one opinion there would be no world, and nothing to live for.

Brothers, each individual has as much to say regarding the business of the union as the president, and should at all times, "in justice to himself and the cause" express his views. I have harped on this matter time and again and will keep it up until I see some enthusiasm stirred among us.

Now that we have elected officers, and some of us cast our vote on the losing side, we should sustain them in their respective places, and remember it is not the officers personally, but the union that suffers, when we so far forget our obligation as to endeavor to oppose them because we did not elect them. I am perfectly willing to let the whole world know how my vote read. It did not read for Brother Hisserrich but Lafferty. Brother H. was elected, and I am as ready to serve under the leader chosen by the majority as anyone who cast his vote on the winning side. Personalities must be unknown in our assemblage. We must discuss subjects of interest more than we do. There is no man on earth so wise but can receive ideas from the most simple. The idea of two unions of one craft with different objects must not be considered for a moment. As we now stand our hands are full, and our progress rather slow, but not too slow considering what we have to contend with. Even when we stay together as one, our opposition is very strong and should we become divided among ourselves, the outcome would be, Failure! I do not condemn any brother for doing a thing, even though it injures our cause, where he with a clear conscience proceeds open and above board. I say plot and use every effort to do what you can openly and say what you think is right. But again I say if the majority do not think as you do, don't become disgusted and in a fit of spite attempt personal injury to any of them, for you only make enemies, and injure the cause.

Be charitable and overlook many things that at the moment may seem insults, and in the end you will find more adherents to your views than would be were you to measure everything in your own half bushel. Our union is in a very fair standing and must be kept so, and only by united action can that be done. A look at our membership will show the world what we have now on hand, and to look back but a few years will show what material we had to spring from. Hold your head as high as any one, and remember that the most hardened criminal has respect for a true gentleman.

While suggesting subjects of study, one that comes very vividly forward is the gentleman, not merely a well-dressed man, for you can look for gentlemen in dirty overalls and jumpers. Money does not make one. Study and profit by what you learn.

A great many brothers of No. 1 have left St. Louis, and it is seldom we hear from them, but so far every letter has been very encouraging. To the absent ones we will say, don't forget the cause; life is very short and many difficulties strew our path; therefore stick together, and what to one would seem a mountain can with combined action be easily removed. Ours is a combination of causes "simmered" down under one head. Read preamble in Constitution of the Brotherhood of Electrical Workers of America. Don't run over it as you would a newspaper item of little interest; read it carefully, and also look over the Constitution and see how well studied every article in it was, and consider how the brothers on the committee must have had to cudgel their brain to express so perfectly the feelings that should be in every electrical worker's heart. Do not live as though you were the only person on earth entitled to the good things to be acquired, but be willing to let some others have a little. An old saying that covers the point to a nicety (and so true) is, "Live and let live."

THE ELECTRICAL WORKER, our official journal, deserves more than it gets, but makes no mention of what it thinks partly due to it. They leave it all to us to decide. So think over the matter at times, and whatever you can do for them will be thankfully received. Small donations thankfully accepted and larger ones in proportion. Any products of your fertile brain will be acknowledged. If none such on hand, the products of the soil, such as potatoes, squash, watermelon, etc. Remember, Brother Kelly is no longer "single-minded"; that is, he must consult one other before making any decisive move; but he is still faithful to his trust.

A question that has almost become threadbare is, Where is Brother Billee Martyne? The answer invariably is, I don't know; heard last of him at So and so, but he ain't there now. The Wandering Jew's record has been broken, and I think Brother Martyne justly deserves the title of King of Tramping Electrical Workers. Brother M. is an enthusiastic union man and does a great amount of good for our cause on his travels; he is also one of the best workmen in his line. Anyone having about fifteen minutes' work to do will do well to hire W. B. Martyne.

The growler is still a bone of contention. Of all the despicable things on earth, one of the worst is a strong, healthy, able workman always begging a dime for a can of beer. Beer as a beverage is fine; as a consolator and healthful drink, hard to surpass; but as a master it becomes a destroyer of all that is honorable in man. Some men would almost starve before asking for food, but let there be but a ghost of a show to get beer and they will almost get down on their knees to anyone. I am not waging war on beer drinking, but on the practice of making a beer sewer of your anatomy. All of you who are moderate drinkers keep on, but you who have no control of yourselves don't swear off, but just stop short; I did. The first few days was rather a hard battle, but now a drunken man only has a tendency to make my resolution stronger. Remember Brother Riley, our honorary brother, if you have

any ideas to impart to the Brotherhood. Go and discuss them with him. He can word them so that any reader of THE ELECTRICAL WORKER will understand. Keep your eye upon the proceedings of the union, and, when necessary, put your shoulder to the wheel, and know that what you do for the cause benefits you as well as others.

Attend the meetings and suggest whatever may come to your mind; let it be weighed, and if found wanting discard it. But don't be discouraged; try again. As the times are very hard just at present, do all you can to help one another. Be faithful to your employer and you will be rewarded; if not pecuniarily, your mind will be at rest, which is a great factor to improve digestion.

Remember our absent brothers, and if you hear anything from them, tell us all; for our interests are mutual.

With sincere wishes for the welfare of the National Brotherhood of Electrical Workers of America and our paper, THE ELECTRICAL WORKER, I am

Your servant,

W. S. PEEBLES,

Press Secretary,

St. Louis Union, No. 1.

MILWAUKEE, WIS.

AUGUST 9, 1893.

Editor Electrical Worker:

We had a pleasant day for our picnic and all the brothers made it pleasant for themselves and friends. We had a tug of war with the switchmen, the champions of the city, and they lost their title, as the brothers, who had two weeks previously selected a team, won easily. The switchmen had a new wrinkle and wanted the boys to pull the last man over the line, which they did, in thirty seconds the first pull and in about ten seconds the last time. They had a return match at the switchmen's picnic and won it with ease. The fat men of the team, Bros. F. S. McPherson, Q. Jansen and Wm. Crowley entered the fat men's race and took the only prizes given, Bro. Jansen getting first, McPherson second and Bro. Crowley third.

Bros. Feter Keelyn and Alb. Smith have their cards out and will get all the construction work that we can give them. They have just completed the equipment of the first automatic telephone receiver and transmitter system in this city for the Evening Wisconsin. Messrs. Cramer & Aikens, the editors of the same, gave the brothers a good letter of acceptance.

The only electrical display that has been worthy of notice in our city during the late Turn-fest was the illumination of the new Pabst building, the tower having about two hundred sixteen-candle power lamps in a circle, one two hundred-candle power lamp on the flagstaff, and two hundred sixteen-candle power lamps on arch over main entrance and one hundred and fifty sixteen-candle power lamps forming the trade mark of the company, composed of red, white and green bulbs. W. F. Sullivan, the electrician for Pabst Heat, Light and Power Company, who, by the way, has all brotherhood men working for him, had a good many people guessing out on the lake and suburbs what was up there on the tower. It could have been seen eight miles.

Note.—You had the name of H. Denister instead U. J. Deuster. This is the brother we wanted all unions to look out for.

Yours, fraternally,

M. J. QUIRK,

Press Secretary.

NEW YORK.

AUGUST, 1893.

Editor Electrical Worker:

Out of the mass of evidence that our country is suffering from a financial stringency of no small proportions, we cull the following:

"It is reported at headquarters that a number of the electrical contractors in this city are unable to push their contracts, because of lack of material.

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By the same quadruplex telegraph comes the message that the factory of one of the largest supply houses in the world is piled with untold millions of feet of the needful and that the shelves are groaning with the weight of appliances."

Here is a chance for a master mind to bring order out of chaos. Our long distance 'phone has been crossed a number of times lately with local circuits and very naturally this office is inconvenienced by such occurrences, coupled with the fact that we have never yet been able to get an insulator of sufficient repellant capacity to keep induction off an earth circuit. And in the hum of business we catch a word now and then about an Electrical Contractors' Association and an agreement it has lately made with No. 3, also some broken remarks about exorbitant fines that it imposes upon its members because of infractions against the working rules and wages of the association.

Then, again they say to keep away from the Board of Delegates of the Building Trades and avoid all fines, etc., so as to be able to meet the demands of the far sighted managers of the supply houses.

This seems to be the solution of the question as we take a retrospective glance. Sixty days ago there were millions of Brag, Bluster & Bluff to fight the Union. To-day there is a scarcity of material and to make sure that it becomes plentiful in a legitimate manner the supply houses are delivering to all comers, C. O. D.

In our May number we mentioned a little matter concerning two men from Boston that were engaged in setting up a switchboard made by the Kelly-Cushing Company, that they finally joined Number 3. Since that time the Kelly-Cushing Company have closed orders for their patent interlocking, interchangeable switchboard for the Metropolitan Opera House, Henry Abbey's new theatre, 38 Street and Broadway, and the Grand Opera House.

Mr. W. Kelly is also consulting engineer on the new plant to be installed in the Manhattan Life Insurance Building, which is in process of erection on Broadway, near the Consolidated Stock and Petroleum Building. The building extends through to New Street.

Mr. Kelly specially stipulated that none but members of Local No. 3 in good standing should be employed upon the work and the contract remained in "*statu quo*" for some time for the purpose of allowing the competing firms a chance to see that a union can do some pretty clever business when it gets down to a business basis.

Mr. Kelly is a man who has grown up to his present position from the ranks of the Journeymen Plumbers' Union of this city. During his time in that trade he went abroad and superintended the sanitary installations in the model dwellings erected in London, England, under the will of the late Geo. Peabody, philanthropist. The will laying stress upon the point that this work should be handled by an American.

Now we hear that the Carnegie Music Hall is to be rewired at the time of the fitting up of the additional stories that are to be added. In this building is illustrated the something for nothing policy that has made so much work for our trade in the past—interior conduit work with tubes drawn or slipped on to the heavy wires and sleeve split and put on the joints. Any number of elbows to get to any point, duplex wire drawn in with a good will and a strong arm reduced in it carrying capacity from one to three-tenths over the original.

This brings up the practical point that while rubber will stretch it is not a natural condition, as can be easily demonstrated by examining a pair of suspenders or elastic bands that have been stretched to their fullest tension for a long period of time.

We should avoid all methods that do not give the highest results after having had sufficient time to fully satisfy practical workers of their uselessness.

Speaking of practical work, the press secretaries have an excellent chance to do some by giving each issue, if not their own, some one else's experience or knowledge and thus give our brothers in forty-four States a chance to accept or condemn existing rules.

To illustrate. To ascertain the horse-power of a motor:

"Multiply together the number of amperes of current that the armature will carry, and the number of volts of pressure at the mains for which the motor is designed (these are usually marked upon the motor); then divide by 746. This will give the electric horse-power absorbed by the motor from the mains. A good motor will give out as mechanical power more than 80 per cent of the electric power thus supplied to it."

The foregoing is from electrical data, published by Sylvanus Thompson, D. S. C. B. A., F. R. S. and Eustace Thomas, London, England.

The writer recalls an experience when paying a visit to the Edison Illuminating Station on 39th Street, New York, permitted through the courtesy of Mr. W. B. Hadley, their former genial superintendent of the wiring department.

After examining the great mains and regulators and closely eying everything in sight, the question was asked of the attendant if the dynamos were protected against local short circuits, or whether there were any fuses on the machines. He replied that "he did not think Mr. Edison would like to stop a machine as quick as that."

Shades of Franklin defend us, what chance there is for improvement even in the "very best help, that get the very best wages and the very best treatment of any employes in the trade."

We wish that visiting brothers would be particular to lodge their cards with our delegate at 114 East 13th Street, New York, and secure work through him, as we pay him for that work and he is able to find friends for strangers and see that no injustice is done them. He can furnish them with all the trade rules and guard against any leak that might happen through the best intentions.

We have quite a number unemployed and are obliged to hold off applicants from remote points, and also members of nearby locals. So any brothers that think that New York is "the place" better think twice before they move or they may become high privates in the army of the unemployed in this strip of the Elysian Fields.

We are looking forward to a grand parade on Sept. 4th, and expect to have our sister locals join us.

We feel that the following from the lips of a delinquent member who has stood by the company that employed him when his brothers were on strike will serve a good purpose:

"If there was a strike tomorrow and I was out of work and my family starving I would not lift my hand again to help a company. I would stay with the boys. I tell you, I never felt so cheap, or so mean as I did when scabbing it with that company."

These are the words of a penitent man. He had just dropped \$25.75 with the delegate for benefits he drew with the company.

C. W. HOADLEY, Press Sec.

213 Willis Ave., N. Y. City.

NASHVILLE, TENN.

AUGUST 14TH, 1893.

Editor Electrical Worker:

It is very warm, I mean hot, here now and as I write this I am decidedly "neglige." But as warm as it is consider how warm it is in Chicago. Consoling thought. Things electrically are quiet here just now and I am somewhat at a loss for material for this month's article. The Overland Electric Railway is in full operation and if they continue to cater to the public as they have so far they will merit the patronage they will certainly receive. Their palace cars have smokers partitioned off and lovers of the weed will appreciate this convenience.

There is a rumor afloat that the Nashville & West Nashville Dummy Railway will soon equip electrically. The Nashville Railway & Power Company have resumed operations after an idleness of several months.

We have decided on our uniform for Labor Day. Black pants and shirt to match, white tie and black crush hat.

Miss Rosa Prang will act as sponsor for No. 5. Miss Prang is a sister of our own "Gus" and is as winning a little lassie as you ever laid eyes on.

Our last meeting was a war of words from the start to the finish. Brothers Bender and Smith got decidedly warm at one time and the former came near being fined. Union banners are already being displayed in the various show windows and our banner compares favorably with any of them. There is a mild kick being indulged in by a few of the boys regarding contributions to the Labor Day fund and the one that is doing the most is a salaried officer of No. 5. Johann Bender is a member of the German 400 and what he don't know about the "vocal organs" isn't worth a penny. A motion was made at our last meeting in effect to have the minutes of a previous meeting typewritten, framed and presented to Harolde Burgess Smith. It was lost. The long suffering, non-salaried Press Secretary is being scored and maltreated for the reason that he don't write sense. Nonsense. I notice in a Chicago paper that a parade of the unemployed is contemplated in addition to the Labor Day demonstration in that city. Well, I think Nashville would compare favorably, as we have now about 1000 Indians drilling around without any visible means of support. Our original idea for Labor Day was to have an immense float, but owing to the present stringency we have abandoned the idea and will walk. It will be much more convenient, too, as the boys can slide out of line and libate without the bother of stopping the horses, etc.

One application for membership was received last meeting and referred to a committee. Delegates to the Central Labor Bureau, Smith and Farewell, were instructed how to vote on the strike fund question which is now before that body.

Well, as I have nothing more of note, I remain,

Fraternally,

P. H. LANGDON,
Press Sec.

TOLEDO, O.

AUGUST 14th, 1893.

Editor Electrical Worker:

As this is my first appearance in the journalistic field, I feel some what embarrassed, and will ask the critics to pardon me for whatever blunders I may make.

Well, No. 8 has turned a new leaf and expects soon to be one of the best locals in the union. It has elected a new set of officers, which could not be beat. Our president is a sober, industrious and popular young man with all his fellow-craftsmen; a good parliamentarian, and best of all, a man of his convictions. Our corresponding secretary has a good education and will show his talents with all correspondents. Our financial secretary is tried and true, having filled the position for four successive terms, and as all the members of No. 8 work in unison with their officers and one another, we can not help but make it a success.

It is with deep regret that I report the death of Brother Louis Nape, who was accidentally killed on the 10th of July, while working, as he thought, on a dead circuit, but somebody blundered, and a bright light went out—cut off in the prime of his manhood—yes, the very eve of his marriage, leaving a heart-broken betrothed and a sorrowing sister to mourn his sad and untimely death. "Luy," as we familiarly called him, was a favorite among all the boys, and had a pleasant smile and a kind word for every one. We will sadly miss him from our meetings, to which he was an ardent attendant. Whose fault it was that caused his death we can not say, but surely it was not his own, as he had had

several years experience in all branches of electrical business, and was considered by the company as a careful and trustworthy man. Let his death be a lesson to every electrical worker to walk carefully in death's path.

FRITZ,
Press Secretary.

CHICAGO.

AUG. 12, 1893.

Editor Electrical Worker:

Times have been hard in the electrical business here during past month. Building operations are almost at a stand still, but a better condition is looked for. A large number of linemen have been laid off by the Telephone Company. Chicago is suffering from the general financial depression and one electrical manufacturing concern was sold out by the sheriff on the 9th inst.

No. 9 has a new president, vice Geo. W. Edison, resigned. White he is by name and by nature. Bro. C. L. White's election was unanimous, which shows the confidence the Union has in him. He is an indispensable man to the company he works for and uses neither tobacco nor intoxicants.

C. H. Patrick has been found guilty of being a detective in the employ of Mooney & Boland and has been expelled. Several other members are under charges for various offenses. Ed. Morrison, who was advertised in the June issue as stealing a kit of tools in St. Louis, denies that charge in toto, and he has repaid the \$2.50 owed to No. 9. Extensive preparations for Labor Day parade were made at our last meeting and the banner made at a cost of \$225 00 was received. Brother G. J. O'Reilly, business manager for THE WORKER, who is in town on business, favored us with a visit.

Experts for various companies exhibiting at the World's Fair are giving free lectures on their apparatus in the Western Electric Company's science theatre. Such subjects as search lights, Gamewell fire alarm, etc., have been handled.

The finest exhibit is made by the General Electric Company. They installed the electric fountains, the pillar of light, the coronae-chandeliers of sixty arc lamps, which light the Manufactures building; also the equipment of the Intramural elevated electric road. In the power-house of this road there is one of their multi-polar generators, with an armature 9 feet 1 inch in diameter, directly connected to a cross-compound 3000 horse-power Reynolds-Corliss engine, running at seventy-five revolutions, with a steam pressure of 120 pounds. The generator is rated at 2,500 A. at 550 V.

The exhibit of the company occupies the center of the Electricity building, surrounding the pillar of light. Here is shown their railway and marine apparatus, underground system, historical machines, electric light fittings, etc. Prof. Thomson exhibits an apparatus for high potential discharge, which gives a spark 64 in. long, at 2,000 V. In the lamp department is shown lamps of all shapes and sizes, and in the instrument room is a splendid piece of decorative lighting, in which variegated colored and frosted miniature lamps complete the architectural tracery on the walls and ceiling—a superb effect.

But the most interesting department is their electrical mining exhibit, showing mining locomotives of 30 horse-power, air compressors, drills, pumps for all kinds of duty, coal cutters, mining hoists—including one run by a 120 horse-power reversible motor—nearly all of these machines are in actual operation. One multipolar motor works from a 220 V, direct current supplied from the generation at the power plant in the east end of Machinery Hall. This motor drives a Knowles' triplex deep mine pump that supplies a jet of water under a pressure of 280 lbs., which runs a Pelton water wheel. The speed of the water wheel is about 750 revolutions per minute and its power is transferred into electricity by a 3-phase 35 K. W. generator whose armature is on the same shaft with the wheel. The

current output with a potential of 500 V. is led to a bank of converters and is transformed to one of 10,000 V. pressure. Very small copper wires insulated with fluid insulators on poles carry this deadly current to a set of transformers, where it is stepped down to 110 V. and used to run incandescent and arc lamps, 3-phase motors for generating the uninterrupted current which runs the Marion percussion drill and for other mining machines, or it may be used to run a dynamotor which will restore the 220 V. direct current with something subtracted for exchange.

L. L. JOHNSON, P. S.

INDIANAPOLIS, IND.

AUGUST 10, 1893.

Editor Electrical Worker:

No. 10 is in a flourishing condition and hope to make a grand turn out Labor Day. The labor organizations of this city voted on having a band contest at our picnic, open to all bands in the country except the Whiteland Band, and all Indianapolis bands. First prize \$200, second prize \$100 and third prize \$50. We expect to have a good time and a large crowd. The contest will be held on the picnic grounds in Armstrong's Park.

The Edison General Electric Company has been awarded the contract for the electric illumination which is to be done here for the coming G. A. R. Encampment. The understanding is that they will put in a few special plants at different points in the city for the illumination.

Bro. Ed. M. Wheat of No. 12 was in town a few days and made himself known.

All delinquent members should beware of this thing of letting their dues fall behind over the specified time and then afterwards coming around and squaring themselves. So, if you have the sand to tell people you are a union man, no matter where you are at, you will keep square on the books.

Some brothers are too easy or too slow. They get a job and if their employer says anything against unions and union men they hide their colors. A true union man won't do that, no matter whether he be in a well organized town or not.

Pay your dues, stand correct on the books and always let your secretary know where you are at, as it saves time and a good deal of trouble.

Bros. C. Peck and Wm. Deihl of Chicago are sojourning in our great metropolis.

Bro. Ed. Boyle announces his intention of going to Baltimore. He is a hail fellow well met and a good lineman.

The golden ax fell here on the 8th. Ten journeymen linemen were turned loose, so lock your hen coops.

Bro. Wm. Morris, a very handy lad with anything that has a four on one side and three on the other, says he is headed for New Orleans. He is a good arc man, they say.

Our Bro. Vice-President Wm. D. Burford has gone into the electrical contracting business. Estimates given on any and all kinds of electrical work. General office at 38 West Pearl street.

Work is dull in Indianapolis at present; better times are hoped for.

Faternally,

D. A. GREENWOOD,
Press Secretary.

EVANSVILLE, IND.

AUGUST 10, 1893.

Editor Electrical Worker:

No. 12 is still progressing, having since last month added two new lights to our circuit, and we have gained a point with the telephone company. They have been working a lot of non-union men and scabs and now they have just taken on a union foreman from Chicago, so now the boys are right in it.

We are getting things down pretty fine. Bro. Peebles of No. 1 spoke in the last issue of Cupid and his darts among the boys in St. Louis.

He has been here at work since our last letter. Our vice-president, Bro. Irwin, left the ranks of single blessedness.

We can't complain of business being very bad here at present, as all the boys are working. Our construction companies have been doing a very good business so far and seem to be busy yet. We have been talking some of the apprenticeship system and getting it started here. We would like to hear some of the views of the other unions on the subject.

Well, as my time is limited and weather very warm, I will close, hoping this will reach you in due time.

C. H. BROWN,
Press Secretary.

CLEVELAND, O.

AUGUST, 7TH, 1893.

Editor Electrical Worker:

In my previous letters to the ELECTRICAL WORKER I was pleased to inform the members of the proposed work to be done, but owing to the stringency in the money market or some reason as yet not found out, there has not been any indication of work getting started. There were miles of new road-proposed and franchises granted for them early in the spring, but for some unforeseen reason that is as far as they have got, so would warn all brothers that work in this city at the present time is very dull; and some of our members are leaving town, as it is impossible to secure work here, as we have men in all branches of the business out of employment. Should any other city have work they could secure for our men they would be glad to hear from them. When our work starts up I will not be backward in letting all know of it.

Our next National Convention, which will be held here, is taking up much of our attention, as we are going to make it a memorable one for all the delegates who shall attend; we have committees appointed and will soon have arrangements made so that the convention could be held next month as far as we are concerned. We look for a large attendance, but if business is the same in other cities as it is here the outlook is not very promising for a rousing reception, yet we are going to do our best.

We are adding new members slowly but steadily and some of our suspended members are coming back, which must mean there is some good in the organization or they would remain out.

Great preparations are being made for our Labor Day parade, and of the thousands of union men in this city the Electrical Workers have the honor of furnishing the marshal-in-chief, Brother Jennings, our genial financial secretary.

Hoping I may be able to hear from some of the locals in regard to work

I remain, yours etc.,

N. DUFF.

NO. 17.—DETROIT, MICH.

The Electrical Commission have decided to advertise for bids for the construction of main conduits, according to the plans prepared by Engineer Dow.

C. A. Newcomb, the short term commissioner on the Electrical Board, has resigned, and after Mayor Pingree had nominated Ex-Comptroller Black and he neglected to qualify for the office within the required ten days, R. H. Fyfe has been chosen to fill the vacancy.

Marcus Gates, the lineman who fell from a trolley pole near the Soldiers' Monument, some time ago, breaking both legs, died on July 25th.

Although the council adopted a resolution directing the owners of all unused electric towers to have them removed, the Board of Public Works refused to enforce the order until the Commissioners had decided upon which set, if either, should be purchased for the city plant. It is now said the Board will recommend the purchase of the Brush Towers at \$525 each.

The new city electric light plant will be located on the river front, between Bates and Rudolph

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Streets, the commissioners having chosen the Walker property, and the site of Viger's coal yard. This will include thirteen lots and cost \$62,500.

Despondency, on account of being out of work, sickness and domestic troubles, it is thought, were the combination which temporarily unbalanced the mind of Brother Joseph P. Asam and led him to take his own life, on the 15th ult. He took a dose of "Rough on Rats," and died in a short time, in spite of the prompt medical attendance. No. 17 made a very presentable turnout at the funeral, marching in ranks to the German Lutheran Cemetery, where the interment took place.

On July 21st, Harry Rathwell, a lineman, formerly of Detroit, was killed by a live wire, at Bay City. It is a singular fact, and one for which I have no explanation to offer, that this should be the third death among the men who worked for the Detroit Electric Light & Power Company, while their union men were out on a strike last September. A fourth was so badly injured as to necessitate a long sojourn in the hospital, since which time he has decided to go into other business. With the exception of Brother Asam (whose death is here mentioned) not a death has occurred in the ranks of the faithful of that occasion, and not even a serious accident among us.

REX.

KANSAS CITY, MO.

AUG. 8, 1893.

Editor Electrical Worker:

As my last communication was not "cut out," I will try once more.

Before my next is received Labor Day, '93, will have passed into memory.

No. 18 will be right in line with the other labor organizations of K. C. on September 4th. We have got some hustlers on the committee of arrangements, but I will not brag on what we are going to do, but will let you know what we did do.

Last Wednesday night the Building and Trades' League declared a boycott on the 9th Street Theatre, which is being built, because of the owner, Mr. Clark, refusing to recognize union labor.

He stated that he would spend \$1,000,000 before he would accede to their demands, never considering for a moment that most of what he has was paid to him at the box office by the people he would have nothing to do with. Well, he must have spent it quickly, for on Friday night he gave notice personally that after Saturday night none but union labor would be employed on that building. Now some of the scabs—would-be wiremen, employed there are very anxious to join the despised union, but they will be disappointed. We will let them keep right on wanting until they at least know enough to carry material.

The cause of Brother J. J. Callahan's extensive smile is the arrival of a 10-pound lineman Wednesday morning, the 2nd inst. Callahan felt so good that he had a keg of Heim's Best on tap Saturday evening at the Telephone supply room, and as the different gangs came in it was wonderful to see how expeditiously they unloaded—the wagons, of course.

Brother Frank Green wanted to exercise his gentle voice, but his remarks fell on such an unappreciative audience that he was obliged to subdue it by another battery jar full of the "amber."

Bro. Burns, of the Kansas City Electric Light Co., met with a very serious accident that same afternoon while working on 18th & Troost, and the deadly alternating was the cause. He was on a pole preparing to pull up a wire they had just strung in. He had hold of one wire with his right hand and his right side in some manner touched the other wire at a connection, and as his shirt was wet with perspiration, in an instant his body was charged with the deadly current. He was held as if in a vise. Brother Adams, working on another pole, saw the accident and cut the wires and at the same time Brother Burns threw his knees to the pole and broke his spurs out and falling backward, his spur strap caught on the iron step and held

him. Brothers Adams and Woodward went up the pole and with the assistance of passers-by got him down. His right side was not burnt much, but his right hand, where poor contact was made, is badly burned. The prospects at present writing are that he will lose his thumb and third finger. The burns were dressed by a physician living near by and the brother was soon able to go home alone. Brother Burns evidently owes his life to the fact that the current only passed through him on the right side and arm. He stated to the writer that he thought his time had come. He realized his peril and tried to call, but knew he made no sound; he tried to push himself loose with his left hand but it seemed as though he was paralyzed; he put his hand, to the pole but had no strength. How close he was to death may be better understood by the fact that his face was black when he was taken down. Brother Burns has a host of friends who will be more than thankful at his miraculous escape.

Brother Quigg's weary looks are caused by the addition to his family of a baby girl.

Brothers Lynn and Boggs, who were on the sick list for a couple weeks, are able to attend to their duties once more.

Quigg & Roth report a good business. Their stock, which was slow in arriving, is coming in daily, and they will soon have a first-class stock of everything needed in the business. They have several large jobs in view which were figured on at union prices for union men.

I think I hear some one say: "Ring Off." So I will hang up my transmitter until the next call.

Yours fraternally,

F. M. ROSE,

Press Secretary.

WHEELING, W. VA.

AUGUST 3, 1893.

To the Editor of Worker and Brother:

It is with pleasure that I am placed in position to speak a word to my fellow workmen. No. 21 is not as flourishing as we would like to have it, although she is going along very nicely at present. I can safely give the "B" the benefit of causing the brothers to open their eyes as to where our trade was drifting. Brothers, we have intelligent men in our ranks. Then let us not lag with our burden to make the "B" a success. Let every brother put his shoulder to the wheel of electrical knowledge and educate himself and arouse his indifferent brother. "By their fruits ye shall know them." A true verdict from those men who have their money invested in our trade, and who are closely watching the "B" to see if it will result in the education and advancement of the men who handle their material and machinery. Brothers, it will pain me to see men, for an indifferent cause, leave their work and go on a strike. That is what ruins good solid organization. If we would only educate ourselves and study our employers' needs, we will in that way gain more than in trying to force them to unreasonable terms. Brothers, did you ever notice the punishment of a child? How easy it is to control the same by talking kindly to it; but, on the other hand, if the rod is used it will repent in the presence of its parents at the time of correction, then go out and do double the wrong it had already done. If we use force for our means of betterment, we must expect it in return. The "B" has seen twenty months of successful life; ever keep it so. All work hand in hand to better ourselves. Do not let jealousy and bigotry rule and ruin us. Brothers, you remember the time when our wages were small. We have worked at climbing for \$1.75 per day; for wiring, \$2.00 per day; what were our thoughts? The social relations between official and worker were anything but pleasant. Unrestricted officials made all men liked or disliked by higher officials. Though only employees, they seldom failed to assume vested rights of proprietorship, and fixed consideration that would be for their own good, without regard to any equitable consideration of the true electrical workers' rights. Being granted no voice in fixing the condition under which we should serve,

and the pay as fixed by our lord and master being in no way adequate to the risks, knowledge and hardships incident to our position, we were naturally distressed both in body and mind, as they thought us only worthy to carry "spurs" or "bore holes" to run wires and answer their dictator. But, behold! A body of honest, upright and determined workers of our craft came together in St. Louis on November 28th, 1891, and signed our declaration of independence. Brothers, on our Fourth of July we should celebrate. This was the period of the electrical workers' revolution. The cause that produced it was the denial of a voice in a government by the governed. Owners desiring to bolster personal prestige thought to satisfy capital by putting in practice the "Old English" custom and notion, that only as wages fall profits rise. Digging dividends out of the pockets of the "worker" made necessary the putting in practice by the "worker" of their faith that right makes might, and caused them to dare and to jeopardize home and place for right principles, and to set in motion the evolution of social equality. The effect! Emerson said, "Man's character is the conscience of the society he belongs to," and the condition of this period naturally selected the sturdy character and best element who were imbued with principles that overtopped personal interest, and like the continental fathers, who, by their sacrifices, made the law granting to all right of appeal, life, liberty and the pursuit of happiness, realizing that to make these salutary provisions effective those who suffer must be the complainants, they took upon themselves the dangers of demanding obedience. Believing the principles were right they dared to defend them, and to-day, through the never ceasing evolution, over the sacrifices of place, home and comfort, the effect is apparent to every thoughtful student of social economy in the higher moral altitude, in the greater recognition of human rights, giving a right to a voice in the disposition of ourselves and putting into the pockets of every man that handles electrical current nearly, if not quite, double the compensation of that period when a few dared to form the nucleus of our great and beneficial institution of to-day; insuring us against official greed and the natural tendency of unrestricted human nature. We can hardly overestimate the benefits that have accrued to us, and yet eternal vigilance is as necessary now as when "Patrick Henry" electrified the nation with his declaration. How many feel the full force of these benefits? How many stop to think when they are called upon to contribute a little to maintain its prestige, for charity's sake, for legislative work, etc., that they only pay a small interest on what they continually receive in principal? We should all remember that our membership, the payment of our dues and wearing a badge are not all the duties we owe to our great "B." Every day brings us face to face with new complications and difficulties that have to be met, with fresh demands upon our loyalty to right principles, restraining ourselves as well as others, and above all, keeping ourselves in social touch, that we may have no divided house, and last, but not by any means least, we must remember and give due heed to the fact, that we can not expect to successfully combat the stratagem of human reason with the withdrawal of muscle or brute force only. We must come to an understanding of the vast and potential aggregation of capital invested in things electrically, continually centralizing, whose power ramifying courts and legislatures, manufacturing public opinion at so much per line—an influence that is felt from the town council to the White House. Give this your due consideration. All act as one.

Fraternally,

W. C. P.,

Press Sec. No. 21.

P. S.—Brother Kelly, remember me this month please, and send me a paper; also Brother Ullery did not receive one last month.

How is your better half? Success to you both.

Your Brother,

W. C. P.

WASHINGTON.

AUGUST 5, 1893.

Editor Electrical Worker:

Since my last article to the WORKER there has been some little improvement in our business in Washington. The Ebbett House, corner 14th and F Streets, has awarded a contract to the Mather people to put in a plant for 450 lights, but I can not say at this writing if there will be any of our Union men at work on the job when it gets started. The St. James, corner Sixth and Pennsylvania Avenue, is making some improvements in the lobby reading rooms and is also having a metal ceiling put in, also electric lights. There will be nine circuits, controlled by switches, in the office. This job is strictly Union.

The Southern Electric Co., of Baltimore, has secured the contract for wiring the Catholic University here, and they have employed several brothers of No. 26 on the work, and from what I can understand the balance are members from No. 27.

Since last month a committee has waited on Mr. Bliss, of the Bliss Engineering Co., in regard to employing Union men, and Mr. Bliss, on behalf of the firm, stated that just as soon as he had work that they would employ none but Union men, and the firm was favorably disposed towards the Union and were very sorry when Bro. King left their employ.

Bro. Watzel, employed by Roace & Mareau, while fooling with some of the brothers and other employes of the firm, ran his fist through a piece of glass and cut his hand so badly that he will lose the use of three or four of his fingers. This should be a lesson to the brothers not to try their fists on glass, for it's bound to best you nine times out of ten.

Bro. L. M. Saunders has been appointed inspector for the United States Electric Light Co. His duty is to inspect all inside wiring that is done. If he reports favorably on the work the company gives the current; if his report is unfavorable the electric light company refuses to turn the current on until the defects that he reports are made good.

The brothers are warned to be on the lookout for a man by the name of Givens, who is wanted in Washington for getting money under false pretenses. He is no good, and has done the trade more harm than it will be able to recover from for some time to come. If he reaches any town where there is a Union man, run him out.

The Washington Construction Co., since my last article, has asked to have the firm's name placed on our list of Union shops.

J. U. Burket & Co.'s shop is now strictly Union.

The E. M. French Co., of Fourteenth Street N. W., has become a scab shop. Bro. Collins, who was employed by them, was laid off about two weeks ago. He is now taking contracts for himself. We wish him success.

The Ticket Committee and the Committee on Athletic Sports and Games meet at the home of Bro. Jno. M. Berger, No. 805 M Street N. W., on Sunday, August 5th, to complete the arrangements for the excursion. The Committee on Athletic Sports and Games awarded the contract for making the medals and the silver cup to Goldsmith, the Jeweler on Pennsylvania Avenue, between Ninth and Tenth Streets N. W., where the prizes will be on exhibition for the next three weeks. The bicycle handicap race will be held under the auspices of the L. A. W. Mr. Harry Ward, a fancy and trick bicycle rider, has volunteered his services on the excursion. Local Union No. 26 expects to make this, its first grand excursion, a big success.

Bro. Haviland, of Local Union No. 36, who is in Washington on a visit, paid No. 26 a visit on Friday night and made some very interesting remarks for the good of the Union. The members of Local Union No. 26 voted a card of thanks to the visiting brother.

Bro. Jno. M. Berger was appointed by the chair as a committee of one to look after the electrical

work on the new Public Printing Office which it is expected Congress will order built. This committee is to work, in conjunction with the committee appointed by the Typographical Union, before Congress, to see if the work can not be done by day work and not by contract. The object of the committee is to show where work can be slighted by the contractors and why it is to the interest of the Government to have all work done by the day.

The James B. Lambie hardware house of New York and Washington, D. C., gave their electric light wiring to the non-union shop of John R. Galloway of Washington, D. C., not asking for bids on the work; the other electrical firms were not recognized whatever. It would be well to advertise this firm through the United States as a firm that will patronize non-union and scab work. The electrical firms of this city should go elsewhere to buy hardware, and turn a cold shoulder to John R. Galloway, on account of his smooth and slippery tongue.

Local Union No. 26 will be heard from regularly every month unless the Press Secretary is sick.

Yours in the N. B. E. W.,

JNO. M. BERGER,
Press Secretary L. U. No. 26.

PHILADELPHIA.

AUGUST 6, 1893.

Editor Electrical Worker:

In my last letter to your valuable paper, I was commenting on the luck of No. 28 in not losing any of its members by death. I am afraid I was premature. Before the issue of the journal, and after I had written, Brother Charles Mitchell, as he was known to us, was killed by a trolley wire in Atlantic City. The case was a very sad one to us, on account of our inability to find his relatives. The corpse was laid in ice at Atlantic City for four or five days waiting to be buried, and despairing of finding his relatives, Local 28 buried him on the 12th. After the committee in charge of the case had about given up all hopes, they received a letter from his sister, a Miss Ida Gillespie, who lives in the country a short distance from Amsterdam, N. Y., saying that Chas. Mitchell was her brother, and that his real name was M. L. Gillespie. The deceased left quite a little property behind him, which is in the committee's hands awaiting action of the relatives. Brother Mitchell was of a quiet, easy-going nature, respected and liked by all who who knew him. No. 28 mourns his death.

On the 26th inst., Thos. H. Gill, brother of Mr Wm. B. Gill, superintendent of the Western Union Telegraph Company in this district, passed away, after a long and hard fight with that fell disease, consumption. "Tommie," as he was known to the boys, did not belong to the Brotherhood, but was one of the best known men in the business. His career has been a varied one, having started out as a messenger boy with his brother a good many years ago. He worked from one branch to another until his last sickness. At one time he was storekeeper for the Western Union in this city. Tom wasn't half a bad fellow, and I think the verdict of his friends is that he was his worst enemy.

Brother Michael Griffin, who was hurt some time ago by falling out of a tree, is reported as doing very well under the circumstances. Mike is one of those sturdy little fellows that won't give up, and it is dollars to cookies that he will be O. K. again in a short time. He is receiving his benefits, as all brothers in good standing should.

A sad, but laughable accident happened to Brother Wm. Oliver, "Buffalo Bill," on the 4th of July. Bill was showing his patriotism by making as much noise as he could with a small cannon. Some unkind friend whispered it around that it was a beer spigot that he had loaded with powder, but "Buff" says no—nevertheless, the cannon burst and a piece caught Brother Oliver in the leg, making a very painful wound and laying him up for a few weeks. The sick committee visited him

a few times, and they say that Bill has a very broad smile on his face after each visit. He seems to be benefited, as it were.

We have three or four more on the sick list, but I have been unable to get names or nature of sickness.

Work is very dull in and around Philadelphia just now. The Western Union Telegraph Company laid off three or four large gangs about the 25th of last month, and on the first the unexpected happened by the city laying off eleven men in the electrical bureau. The Bell Telephone boys report work as very dull. The trolleys are not making very much work for good men. The only line in the city that is putting up any wire as yet is the Morris and Tasker Street Line. The work there is being done by contract, and the contractors are doing all the wire work themselves.

The boys do say,

That Brother Thomas Flynn always has a smile on his face when they step up to pay dues, even if he does say the only difference he knows between an arc and alternating current is, "That one goes quick and the other quicker."

That Brother Al Brown thinks Monterey Street the finest street in the city, who knows.

That Brother James Conway makes a fine vice-president, and will make as fine a president. He is next, you know.

That Brothers Joseph Kollick, Pete King and Harry Frazer are running a race to see who is the best kicker. Betting is even.

That "Buffalo Bill" can't stand "fire," that is, when it comes backwards. "I have three; have you got two?"

That the excursion is going to be a great success, as the committee all have big heads and feet, probably larger next day after the excursion.

That Brother McDougal likes to see the sun better than the stars, even if he can't go down the river now. Fraternally, yours,

J. W. FITZPATRICK,
Press Secretary.

ATLANTA, GA.

AUGUST 6, 1893.

Editor Electrical Worker:

As this is the first time we have been heard from through the WORKER the brothers may think we are weak, but we are getting stronger every day. We seldom let a meeting night pass that we do not add to our circuit some new lights.

The telephone boys have had a lively time for the past week. A wire came in contact with a street car wire and set the cupola on fire at the exchange and burned all the wires off, but they are all in working order again. The company will soon have all of their wires under ground, as the work is progressing rapidly.

We wish to congratulate the boys in our sister city, Birmingham, for organizing a union there, for I am sure it will benefit us. Three of our members are over there at work and we hope they will join there and take an active part in the meetings, which I am sure they will do.

Bro. Hardy sailed quietly off last week in the sea of matrimony. We all wish him smooth sailing and extend our hearty congratulations.

Fraternally yours,

J. R. WELLBORN,
Press Secretary.

JERSEY CITY, N. J.

JULY 30, 1893.

Editor Electrical Worker:

DEAR SIR AND BROTHER—As this is my first offense since I have held the office of Press Secretary of No. 31 I won't promise you a long letter this time, but I will do the best I can this trip and promise better things in the future.

Bro. Hall and myself visited the City Hospital on the 19th inst. to see Bro. McMullen of No. 33, who was so badly injured whilst at work for the

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Western Union Company on June 29. His sufferings must have been something terrible as he lay unconscious in the hospital for fourteen days after being taken from the pole on which he was caught. His wife, a very pleasant lady, was by his bedside when we called, and felt her position keenly, as Bro. McMullen was only two weeks married when he met with the accident. His left eye was completely burned out and his back and side is burned so bad that the ribs are laid bare. He is also badly burned about the hands, arms and feet.

It is with sorrow I write that on July 17 Bro. Daniel Leary of No. 31 was instantly killed on a pole while at work for the Jersey City Electric Light Company. He had just started in to work at 7 o'clock on the morning of the 17th and was sent to change some wires from the old pole on the corner of Newark and Coles street to the new poles that the company is erecting on the opposite side of the avenue. He had just reached the second cross-arm when he was seen to throw up his hands and fall across some dead wires that were on the pole. Bros. Jones and Ryan immediately ascended the pole and after cutting away the wires secured a rope around the body and lowered it from the pole when it was found that he was dead. The papers as usual came out that day and claimed that he died of either sunstroke or heart disease, although there was a large burn on his left leg just above the knee. The union turned out pretty strong to the funeral, when it is taken into consideration that many of the boys could not get away from their work and the notice was very short. The union turned out about forty men, and headed by St. Bridget's Fife and Drum Corps, presented a very creditable appearance. We also sent a large pillow of flowers to the house on which were the words L. U. No. 31 N. B. E. W. "Brother."

At our regular meeting held last night a motion was passed that the charter be draped in mourning for thirty days in respect to the memory of our deceased brother.

The boys all look anxiously for each number of the ELECTRICAL WORKER and a number of them complain that they do not receive their paper at all. Whether the fault lies in St. Louis or with the Postoffice authorities we do not know, but the fact remains that some of the brothers of Local No. 31 are not getting any papers.

We held our regular meeting on Friday evening and after transacting what business there was on hand the brothers adjourned to Brother Demmert's home and had a grand blow out in honor of the first anniversary of Local Union No. 31, N. B. E. W. Some very fine vocal selections were rendered by the brothers, especially by Bro. Finnerty (Little Patsey Doyle) and President Anderson; while the fun was at its height it was announced that Bro. Scheepsma was celebrating a birthday "also on the quiet," and when the boys did "catch on" they insisted on a song from the brother in honor of the event, and Bro. Scheepsma responded with a couple of songs in German in a very creditable manner. "It is a little girl."

Business in this city is not any too brisk at present, although we have only two or three brothers out of work and their chances for catching on in a few days are very good.

Well, I guess I will bring my letter to a close, promising you a longer one next time, I remain,

Yours, fraternally,

JAMES M. HUMPHREY,
Press Secretary.

PATTERSON, N. J.

AUGUST 7, 1893.

Editor Electrical Worker:

At our last meeting, held July 17th, the following officers were installed: President, E. J. Clancy; Vice-President, J. F. Colvin; Recording Secretary, Joseph Maher; Financial Secretary Raymond Clark; Foreman, John Flemming; Inspector, James Carpenter; Trustee for eighteen months, John McGarry.

On Saturday, July 15th, we held our first annual picnic at Saal's Park, Haledon, and had a very nice crowd; and they all had a good time, and it was a financial success as well. The committee in charge was as follows: Floor manager, Raymond Clark; assistant, James McGuire; floor committee, J. F. Colvin, John Beirne, F. L. Compton and James Wyatt; reception, James McGuire, chairman; E. J. Clancy, secretary; Thomas McAndrew, treasurer; Lew Denike, J. W. Estler, John Carroll, Wm. Carson, D. McDonald, W. M. Rogers, B. O'Rourke, L. Lyons, D. Dolan, John Kane, A. McDonald, Jas. Carpenter, Joe Maher and the great and only John Desmond.

Brother Joe Maher, our genial Recording Secretary, has become quite a dancer and masher, since our picnic. We can't keep him from going to picnics and balls. I tell you, Joe is what the boys call a hummer.

Brother Desmond is an adept at telling snake stories. If Brother D. can be believed, he has seen and killed a great many large and dangerous reptiles in his time, his favorite weapon being a tamping bar.

Brother Compton is out of town, working for the Western Union Company on the Delaware, Lackawanna & Western road.

Brothers Monticue, Maher and McGarry are working for the Ridgewood Electric Light Company, a new plant being installed there. There are two other small plants being built near here—one at Franklin, N. J., and the other at Suffern, N. Y.

It is rumored about town that Brother John Beirne is contemplating matrimony. If this is so congratulations will soon be in order.

Yours fraternally,

E. J. CLANCY,
Press Secretary, Local 32.

NEWARK, N. J.

AUGUST 6th, 1893.

Editor Electrical Worker:

Great cities do not concentrate all their activities at one point. London has its financial center in what is known as the "city," but it has its literary centre as well; its market district, its trade center and many others. And it is largely so with New York. That city has but one Wall Street, but one Broadway, but one Fifth Avenue, and but one park; and in the aggregation of cities and towns by which it is surrounded each one has a claim to some one attribute. No other city can take from Jersey City its distinguishing feature as a railroad town; or from Brooklyn its name of "the City of Churches." Newark is bound to be the electrical center of this coterie of cities. About twenty years ago a young man of genius, full of electrical ideas, entered into a business arrangement with the firm of Roberts & Havell of Washington Street, to assist him in working out his inventions. He was not the first in order of time, for Edison had been working before him on the corner of Broad and Market Streets, in the old Daily building, but on different lines; and we are quite sure that he was the first man to exhibit an arc lamp here. Many will remember seeing it before the store on Washington Street; and that was the pioneer of all the plants by which this city is now illuminated every night.

From electric lighting to motive power was something of a step, yet they belong together as much as light and heat. Vast strides have been made since then, and Newark is quoted all over the world as a successful pioneer in electric discoveries and adaptations. All kinds of electric machinery are made here, and it was one of the first cities to adopt the telephone. Very soon, thanks to the Board of Works and the Consolidated Traction Co., Newark will have a system of street car transit which people from other cities will come hundreds

of miles to see, for it will embrace every improvement in the business that inventive genius, combined with ample capital, can supply.

And here will be seen, too, the cheapest traveling in the world, and the fastest. We shall know what rapid transit is when the lines are finished to Jersey City, to Paterson, to Elizabeth, and west to Bloomfield and Mountclair, and possibly to Summit and Morristown; all this under one system of efficient and liberal management. Compare this with the horse car and six-cent fare of a few years ago, and it will not be hard to prophesy that the onward march of Newark is toward greatness.

W. E. R.

Press Secretary.

BOSTON.

JULY 30, 1893.

Editor Electrical Worker:

Local No. 35 is alive and we are gaining strength every meeting.

Not since I have been a member have I seen anything in the WORKER from No. 35, but from this out I will try and send something every month.

Our ex-President, Ira M. Mosher, has been quite sick; in fact, he had to leave the city and take quite a long vacation to regain his health, but is back with us once more, and gaining in strength every day.

Bro. P. P. Kelly fell from a frame on which he was at work, July 17th, and broke his leg, and is in the hospital, getting along first rate.

Bro. C. Dunn, who fell from a roof a short time ago and was all broke up, is doing well at the hospital and receiving his benefit from the Union.

Bro. Mahoney, of Waltham, is also laid up with injuries received while at work.

I have just received the sad news of the sudden death of Bro. Timothy F. O'Hern. The doctor said that heart disease was the cause of his death. He was one of our new members. I have known him for years, and he will be missed a great deal, as he was a jolly good fellow at all times. At the time of his death he was on his vacation. He had been at work for the Boston Police Signal Co. about eight years.

The Union, I think, is doing well for the time it has been in working order. We make some mistakes, but try to do the best we can. We have quite a lot of kickers.

Now you can bet on it we should be pleased at any time to receive a visit from our Grand President or any one else in the order. We are always looking for information.

July 19th we installed the following officers: President, Charles B. Talford; Vice-President, P. H. Dacy; Recording Secretary, D. O'Brien; Financial Secretary, F. C. Smalley; Treasurer, Fred Johnson; Inspector, T. R. Melville; Foreman, David Flynn; Press Secretary, your humble servant; Board of Trustees, W. P. Shipps, Alton Abbott, T. R. Melville.

We have a membership of 250; 200 are in good standing.

It gives me great pleasure to read the journal. I find lots of information in it.

Bro. O'Brien, our Recording Secretary, was at work sitting poles on Boston Street the other day, and by some means or other the pole got in the way of his feet, and the result is that he is nursing one of them at the present time.

Bro. Bannon, one of our workers, is taking a vacation, and has gone down to the harbor, and when he gets back he probably will tell how he saw the sea serpent and other things.

At our last meeting we voted to parade Labor Day, and I hope that we will make a good showing.

Wishing the ELECTRICAL WORKER success, I remain

Yours Fraternally,

W. H. B.,
Press Secretary.

AUG 1893

NEW YORK.

AUGUST 4, 1893.

Editor Electrical Worker:

DEAR SIR—Being that No. 36 of New York has had nothing much to say in the past, we hope to be able to fill pages in the future, but at the same time we are making new friends at every meeting. We meet every Thursday evening at 45th street and 3rd avenue, New York City. We also hope our sick benefit will be swelled after our summer night's festival, which takes place at Sulzer's Harlem River Park on August 25th, 1893.

Hoping to see our New Jersey and Brooklyn friends present, we remain, fraternally,

A. T. McCABE,
Recording Secretary.

ST. JOSEPH, MO.

AUGUST 9, 1893.

Editor Electrical Worker:

No. 40 is working clear and all the boys are taking great measures for an elaborate display on Labor Day.

The newly elected officers are M. S. Kearns, President; Wm. Dorsel, Recording Secretary; R. W. Stockwell, Financial Secretary.

Brother Krah of No. 9. is with the Columbian Electrical Company of this place.

Brother McGuire of No. 18, who spent the last two months with the Doggett Electrical Company, has returned to Kansas City to accept a position with the Franklin people.

The Tootle Opera House is being wired by the Electric Construction Company of this place. The job consists of 2200 incandescent lights and a 7 horse-power motor for elevator and ventilation.

Brother John Webb, who recently completed the Telephone Toll Line to Marysville, Mo., arrived in the city on the 7th and disbanded the crew. Some of the boys will seek quarters with Brother P. W. O'Brien of Leavenworth, who will build a 30-foot lead and string four copper wires from Kansas City to Atchison for the Missouri & Kansas Telephone Company. Pat will begin operations about the 15th inst. and will take a crew of twenty men. None but strictly first-class Union linemen need apply.

H. T. SULLIVAN,
Press Sec.

UTICA, N. Y.

AUGUST 7, 1893.

Editor Electrical Worker:

August finds No. 42 still in the ring with its members just as enthusiastic as ever, even if not so numerous as in the cold weather. All our members are working, some, indeed, are very busy; telephone and telegraph men, for instance, and their work keeps many of them out of town and away from meetings, but they will find their places ready when they are able to attend.

Our lately elected Foreman, Brother John Chisolm, has left the employ of the Utica Electric Light Company to accept a more desirable situation with the Postal Telegraph Company at Amsterdam, N. Y. Brother Ward has also left the service of the telephone company to enter the employ of the Johnstown and Gloversville Electric Railway. They were both good men and will be missed in our meetings, but may success attend them in their new stations. They are still members of No. 42, but will be, of course, out of touch with us for meeting nights.

Work on the Whitesboro lights is progressing favorably and is about half finished, so that there is nothing here for traveling brothers beyond a warm reception from our members.

On reading the letter of Brother Poston, of Albany, in the July issue, I would like to remark that the same questions have been asked by our members, viz.: Why are we not notified directly upon commencement or settlement of troubles anywhere, and also of black-listed members; and why was it that we never heard anything of that scab list made up some time ago? Beyond the request for names to add to it, would it not do better service

if published in the WORKER? There are men who have been good members of good locals who have changed their locality, and with that change unionism for them has ended; they found that they were not in danger of any serious trouble either from their home local or from that of the locality in which they went to work, and have, in consequence, gone beyond the good-standing limit of arrears and also beyond the time for suspension, and, I suppose were suspended, and with that all action stops. If all clauses of our constitution were enforced by the stronger locals and thus an encouragement were given to those of less membership and of less firm standing members who take the road would take their cards with them and much bitter feeling would be saved in the locals that would be otherwise put to much unpleasant action. I think that it would be a very good idea for all locals to send the names of all members suspended, or reinstated, to the WORKER for publication as they come up; it would keep many in good standing who would otherwise, perhaps, run for three and four months at a time without settling up. It is a matter that would soon repay all locals for any trouble they may be put to in enforcing that part of the constitution which bears upon those points.

At our last meeting Brother Geo. Brimfield was installed as Foreman in place of Brother Chisolm, as he can not now attend.

Brother Burns, of Providence, was in the city for a short time on Saturday, the 5th; he was on his way home from a short vacation. We would like to have met him, but as that was not our good fortune we still hope to do so at some future time.

Well, with hopes that locals interested will consider the points I have mentioned I will close until next month.

Yours Fraternally,
HARRY GORDON.

SYRACUSE.

AUGUST 2, 1893.

Editor Electrical Worker:

As we have been a little behind time I thought we would let you know that there are a few boys in Syracuse. We were very sorry to hear that our ex-President, James Tyrell, got seriously injured by the fast express train at Rochester while crossing the track to make his train and we are glad to hear that he is improving nicely.

We have had some trouble with a few members and have had to expel such as the constitution calls for on account of unpaid dues and tickets for our last ball for the benefit of our union for which one or more did not settle, as they had been given proper notice to do. We as members of said Local 43 had to act as our constitution calls for, as we wish and will live up to it if we maintain our right, we will not flinch at doing our duty, so we wish to have the Brotherhood know that we are constitutional in our progress and hope to see some of the locals that are a little backward in their news items to come forward also.

Yours Respectfully,
CHARLES BRAND,
Press Sec.

ROCHESTER, N. Y.

AUGUST 6, 1893.

Editor Electrical Worker:

DEAR SIR AND BROTHER—The members of 44 fared very badly. Last month we came very near not seeing a paper at all. We had the good fortune to get ten papers for over fifty members. Now, what we want to get at is, whose fault is it? Publishers of papers generally blame Uncle Sam for all these shortcomings when it is their own fault. Now, if there is any trouble sending papers as second-class matter, why not send them first-class so the boys can get the papers?

Things are booming in Rochester. All the boys are at work. The underground work is progressing nicely. The building of the Citizens' Light and Power Co. is finished, and the machinery is on the

way. Still another company has applied to the Common Council for a franchise. So you see we are right in it. There are lots of Chicago linemen drifting to town. There were four here last week. We are always pleased to see any of our brothers come this way, and will do all we can to get them work. But, boys, when you come our way come sober; don't go up to the foreman asking for a job when you can scarcely stand, for nine times out of ten you will be refused. Also, boys, when you tell us you are members of the brotherhood have your cards up to date, for we are like the Chinese, "No tickee, no washee;" old cards don't go. Brother Tyrell of Syracuse, who had the misfortune to be struck by the flyer of the N. Y. C. R. R. a few weeks ago, is doing nicely, and will start for home next week, after a sojourn at our city hospital. They can't knock Jim out. He is like a cat; he has nine lives. Brother Wm. McGivern of 44 was married on the 27th of July. Long life and happiness, Billy. Now I will close, hoping better results on our papers this month. I am

Fraternally,
HARRY SHUMAN,
Press Secy.

SEDALIA.

AUGUST 6, 1893.

Editor Electrical Worker:

Electrical news in this locality is like money—very scarce. All work is at a standstill. The Missouri Pacific laid off sixteen men out of forty-two. There is no prospect of work commencing before Nov. 1st. The Missouri, Kansas and Texas is in need of three or four men to go to Texas. Electrical workers should steer clear of Sedalia for the present. The town is crowded with idle linemen, and inside wiremen can't find enough to do to make a living.

No. 48 had two very interesting meetings since my last correspondence. At our meeting of July 15 we added four new lights to our circuit. At both meetings we had spirited discussions on electrical subjects, which no doubt will benefit some of the brothers.

There was some delay in the delivery of the journal this month, some of the boys getting rattled badly, thinking it was not coming at all.

The Sedalia Electric Street Railway Co. showed its appreciation of good service by sending Bro. Geo. Pope to the World's Fair free of charge, with all expenses paid. No doubt they will be recompensed by the valuable points he will gain.

The Missouri and Kansas Telephone Co. is putting in a new exchange at Clinton, Mo., under the supervision of Bro. H. J. Torbee, who has several members of No. 48 with him. Bros. Al Taylor and Chas. Howell are in Texas, employed by the M., K. & T. They say it is so warm down there they don't even need summer clothes.

Mrs. Bullock, wife of Bro. J. C. Bullock, would thank any of the brothers for information as to the whereabouts of her brother, Joe Ballard.

Opening the circuit for the present, I remain,
Fraternally Yours,
C. E. JACKSON,
Press Secretary.

BLOOMINGTON, ILL.

AUGUST 6, 1893.

Editor Electrical Worker.

DEAR SIR—Hope you will find room in your paper for No. 49. We are getting along fine and our circuit is in good shape. Any time a brother comes this way please call on us as we will be glad to see you.

Our Pres., brother J. T. Lemmons, came very near losing his life last week. In moving a fuse box he got his spur on one wire and hand on the fuse box and got his foot badly burned, but is all O K now. We will soon have a wedding to go to.

Yours truly,
A. J. ARNOLDS,
Press Secretary.

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THE ELECTRICAL WORKER.

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DES MOINES, IA.

AUGUST 11, 1893.

Editor Electrical Worker:

As this is my first attempt at anything of this sort, I am afraid it will not be of much interest, but I will do my best.

No. 55 is O. K. They were rather slow about getting into the circuit, but they are in good shape now. We are getting a few to the circuit every week, and hope to have them all before long. The boys are working hard for every one. Our Brother Grand Secretary-Treasurer was with us on July 29, and soldered all broken connections.

Work is rather dull in this city at present, but we hope it will be better in the near future.

There was a serious accident here last evening. The high wind broke a guy wire which fell across the alternating high tension circuit wires. A deaf and dumb man in passing took hold of it and was killed instantly. He was the first man killed here by the wires in some time.

Our meeting nights are the first and third Thursdays in the month, and we would be glad to have all our brothers who may be in the city upon those nights to call and see us, for we think we have a very interesting meeting. The boys have become interested in the questions that are brought up, and have gone to work to make it pleasant for all.

With best wishes for the success for the National Brotherhood I will open the circuit.

Fraternally,

L. M. SIMPSON,

Press Secretary.

SALT LAKE CITY, UTAH.

JULY 28, 1893.

Editor Electrical Worker:

At our last meeting I was appointed temporary Press Secretary. However poor the appointment may be, I will do as well as my very limited literary talent will allow.

The young life of No. 57 has every prospect of developing into a large-sized and successful union, well represented by every branch of the trade, notwithstanding the depression of the silver market, dullness of trade and the general mania that has seized hold of the different electric companies for laying off the electrical workers.

The telephone and electric light companies, together, have in the past six weeks laid off about thirty-five men, each company retaining two or three men, and inside business is as quiet as a May dream. But our prospects, while not the *creme-de-la-creme* of prospects, are very good.

The City Council, after a hard fight and several vetoes, finally granted a franchise to R. M. Jones for light and power plant. The power-house will be located in Big Cottonwood Canyon, about eighteen miles from this city. It is one of the finest water-power sites in the Western country. It will be a big thing for the city, as well as for the electrical workers. When he begins work he will take in out of the wet a good many of the boys that are now here spending their summer vacation mingling with the aristocratic tourists, gamboling on the sandy beach at Great Salt Lake and sporting on the money they neglected to lay by when working.

There are quite a number of widely-known linemen and wiremen here who are not as yet members of the Brotherhood, owing principally to the stringency of the money market, but are with us heart and hand, and I feel confident they will be added to our grand circuit soon.

Brothers Lovell and Sickholm left for the East about ten days ago, and several others are contemplating an early departure for greener fields and pastures new, while others express their determination to remain within sight of the towering spires of the Mormon Temple and the Holy Tabernacle.

Our president, T. M. McGrail, leaves for the White City this evening, to see the sights of the fair, and visit his old home, at Ann Arbor, Mich. He will be in the East about a month, and in all probability will be a visitor at some of the local unions. Should you meet him you will find him a "hale

fellow well met," and an earnest worker for the cause.

Our recording secretary, R. A. Gilliland, was compelled to resign on account of his duties on the fire department. E. W. Ross, financial secretary, left very suddenly last week; and the vacancies will be filled at our next meeting. We meet on the second and fourth Thursdays of each month.

Hoping that the next letter you get from "Zion, the City of the Saints," will be from the pen of a Press Secretary more competent to hold the office than myself, I am

Yours fraternally,

CHAS. C. CADY.

LOS ANGELES.

AUGUST 7, 1893.

Mr. J. T. Kelly, Grand Secretary:

Replying to your favor of July 28th, I will say that the hope you expressed concerning the successful organization of our Union has been fully realized. Brother Tubman did nobly, initiated eighteen out of the twenty-three men who applied for the charter. The others were unavoidably detained in the country. They have all returned, however, and will be initiated and receive their instructions at our next meeting.

Our next move will be to affiliate with the "Federal Trades" here; a course we deem prudent owing to the remoteness of our Union from any kindred organization.

Since our organization we claim to preside over this whole State, and I, as Corresponding Secretary of No. 61, have been instructed to recognize no limit to our territory until we intrude upon the jurisdiction of another Union of the Brotherhood of Electrical Workers of America.

I thank you in behalf of our Union for the promptness with which you dispatched our order for charter and supplies, all of which I find to be correct.

Thus, you see, that the Electrical Workers of America extend from shore to shore, and we of the "Pacific" pledge ourselves to stand by the organization until every man in our business is emancipated from that degree of thralldom which compels him to lose his identity among men the moment he enters the wage service of his country.

Hoping that the Brotherhood is prospering in your State and all over the Union, and that your members may not be compelled to contend with the supreme financial strait by which business is overwhelmed here, and also that you will occasionally correspond with us, we remain

Fraternally yours,

F. E. PETERS,

Corresponding Sec.

No. 237 E. Fourth St., Los Angeles, Cal.

SAN ANTONIA, TEXAS.

AUG. 13th, 1893.

Editor Electrical Worker:

Local Union No. 60 was organized here on the 22d of July. The matter had been discussed between the boys for some weeks. Finally a meeting of the employes of the different companies was called and the meeting held at Convention Hall. It was determined to apply to the grand secretary and treasurer for a charter. After some days of anxious suspense the charter was received and an election of officers held. The following named gentlemen were elected: J. F. Willedge, President; Jno. Linquist, Vice-President; J. J. Traclin, Financial-Secretary; Jno. Malony, Treasurer; J. C. Kenney, Recording Secretary. W. Graham, Wm. Dukes and Clarence Spreckels, Trustees. E. Lester, Foreman, and Frank Butcher, Inspector. Our officers are not novices in the electrical business. J. F. Willedge has been employed by S. A. Light Company for past five years as foreman. Jno. Linquist was for many years with the Postal Telegraph Company through Colorado and Kansas and is now with S. A. Street Railroad Company. J. J. Traclin has been in the business since eighteen seventy-eight with several companies

through the north and east and has also had an extended experience through the south-west. He is now employed as foreman by Southwestern Telephone Company here. Jno. Malony is an old standby and has been with the W. U. for the past ten years. He is now repairer between Laredo and Austin on I. & G. N. Railway. J. C. Kenney is employed by a contracting firm here, as an inside wireman. The following are the names of the other brothers of No. 60: W. H. Hendricks, Nat. Nealy, J. W. Dixon, J. T. McKew, B. C. Christenson, E. G. Smith, Frank Abney, E. Kulman, B. Parker, Chas. Boisot, Ernest Badders, W. H. Mitchell. We are expecting to add several new lights to our circuit at our next meeting. Work is about at a standstill here and the weather is hot.

Wishing for the continued success of our grand and noble order,

I remain fraternally yours,

J. T. McKew,

Press Secretary.

District Council No. 1, National Brotherhood Electrical Workers of America.

AUGUST, 1893.

Editor Electrical Worker:

Early in the spring of this year Grand President Miller advised the organization of a district council as above. A temporary organization was formed with a representation of five delegates from each local.

A credential committee was appointed. It used the rules of the National Convention for its guidance and declared each local entitled to two delegates for the first hundred and one for each additional hundred, and one for the first fifty or fractional part of the second.

The council then proceeded to elect permanent officers.

For President, C. W. Hoadley, No. 3; Vice-President, John McGinty, No. 36; Recording Secretary, S. Jones, No. 31; Financial Secretary, L. Hamlin, No. 3; Foreman, vacant; Inspector, vacant; Trustees, vacant; Press Secretary, C. W. Hoadley, No. 3.

In this form the council endeavored to handle such business as came before it during the months of May, June and July.

Realizing that many considered the council an innovation and constituted without any real semblance of authority (there having been heard sundry rumors and mutterings from some "hit bird" or "galled jade"), it became necessary to so proceed as to impress upon the minds of all that justice should be done to them and that equity should govern all its acts. Therefore, immediately after the semi-annual election (at which the following officers were elected: President, C. W. Hoadley, No. 3; Vice-President, J. Simpson, No. 34; Treasurer, J. McGinty, No. 36; Recording Secretary, S. Jones, No. 31; Financial Secretary, H. Gourney, No. 3; Inspector, J. F. Colvins, No. 32; Foreman, A. W. Bliss, No. 36), action was taken tending to solidify its position and gain the support of all the locals and their members.

The council stands to the locals as all auxiliary bodies of a similar nature do to their locals and members, whatever order they are in.

True, it is without a constitution or by-laws, but the District President has ruled that the National Constitution shall govern until the National Convention meets and adopts a constitution for district councils, and if any local feels that it has just cause for complaint the Executive Board is always ready to assist any subsidiary body that is inclined to take up a current of a tension higher than its system can stand.

That there is a great work ahead for the District Council is admitted by all. At every turn are met those that no other method has ever been successfully employed to locate and our brothers are realizing what fraternity and mutual assistance really mean.

That old feeling of mistrust and lack of confidence that has existed in electrical circles hereabouts for the past ten years is gradually passing away, and we are confident that each month's report from now on will be replete with a record of searches, surprises and successes.

Yours Fraternally,

C. W. HOADLEY,

Recording Sec'y.

213 Willis ave., New York.

DIRECTORY OF LOCAL UNIONS.



(Secretaries will please furnish the necessary information to make this directory complete. Note that the time and place of meeting, the name of the President, the names and address of the Recording and Financial Secretary are required.)

- No. 1, St. Louis, Mo.**—Meets every Tuesday evening at 305½ Olive st. John Hissrich, Pres.; M. L. Purkey, R. S., 706 Pine st.; W. G. Frey, F. S., 1110 N. High st.
- No. 2, Milwaukee, Wis.**—Meets 1st and 3d Wednesday at 526 Chestnut st. F. G. Raymond, Pres.; M. J. Quirk, R. S., 87 27th st.; J. A. Paige, F. S., Telephone Exchange.
- No. 3, New York, N. Y.**—Meets every Thursday evening at Clarendon Hall, 114 E. Thirteenth st. Second and fourth Thursdays are devoted to lectures and instructions on practical electrical subjects. Wm. Ivary, Pres.; Geo. H. Middleton, R. S., 115 Clinton Place; Clarence Ingham, F. S., 211 E. Ninety-sixth st.
- No. 4, New Orleans, La.**—Meets 1st and 3d Wednesday at Odd Fellows' Hall. Wm. Moake, Pres.; J. C. Bradley, R. S., Custom House and Napoleon sts.; J. J. Vives, F. S., 210 S. Rampart st.
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One of the most interesting and instructive exhibits at the World's Columbian Exposition is that of machinery and appliances for electric welding. One machine, designed for welding large pipe, requires to operate it an electric current of 80,000 watts, equivalent to more than 100 horse-power. It will almost instantly weld the ends of an iron pipe six inches in diameter. Specimens of railway-track construction are shown in which the chairs are welded directly to the rail, also a three-way crossing in which there are six different welds, none of them less than twelve square inches in cross-section. There is shown a railroad crossing of rolled steel, all welded together so as to form a solid piece. The largest electrical weld ever made, having a section of forty-eight square inches, also forms part of this remarkable exhibit.

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The following recent electrical patents are reported by Higdon & Higdon & Longan, patent lawyers, 215, 216 and 217, Odd Fellows' Building, St. Louis, and 48 Pacific Building, Washington, D. C.

- 501,376—Armature—Joseph J. Smith and G. W. Findlater, Jamaica, N. Y.
- 501,194—Revolving Armature for Electric Machines—E. A. Sperry, Chicago, Ill., assignor to Sperry Electric Co., Cleveland, Ohio.
- 501,195—Electric Locomotive—E. A. Sperry, Chicago, Ill., assignor to Sperry Electric Company, Cleveland, Ohio.
- 501,292—Electric Bell—Wilson J. Newman, assignor to H. E. and C. Baxter, Brooklyn, N. Y.
- 501,294—Fender for Electric, Cable and other similar cars—William J. Nunn, Hyde Park, Mass.
- 581,201—Automatic Circuit Interrupter—Alexander Wurtz, assignor to Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa.
- 501,193—Commutator Brush Holder—Alton J. Shaw, Muskegon, Mich.
- 501,049—Commutator Connection—Norman C. Bassett, Lynn, Mass.
- 501,289—Flight for Endless Conveyers—Fred Miller, Corning Ohio.
- 501,048—Conveying and Drying Apparatus—Sheldon H. Bassett, Brooklyn, N. Y.
- 501,094—Equalizer for Rotary Current Systems—Paul Nordman, assignor to Siemens & Halske, Berlin, Germany.
- 501,258—Electric Battery—James H. Mason, Brooklyn, N. Y.
- 501,258—Electric Circuit Closing Device—William Sears, Boston, Mass.
- 501,191—Electric Conductor Switch—Olof Offrehl, Middletown, Conn.
- 501,206—Electric Contact Apparatus—Jonathan P. B. Fiske, Lynn, Mass.
- 501,095—Electric Lighting System—Paul Nordman, assignor to Siemens & Halske, Berlin Germany.
- 501,117—Dynamo Electric Machine—Harry L. Tyler, Corning, N. Y.
- 501,059—Dynamo Electric Machine Regulator—William H. Elkins, Cambridge, Mass.
- 501,060—Brush for Dynamo, Electric Machines and Motors—Jonathan P. B. Fiske, Lynn, Mass.
- 501,309—Regulating Dynamo Electrical Machines—M. J. Wightman and H. Lemp, Hartford, Conn.
- 501,068—Electric Snap Switch—Baryl D. Haskins, Lynn, Mass.
- 501,071—Electric Switch—C. F. W. Hofer, assignor to Siemens & Halske, Berlin, Germany.
- 501,450—Electric Switch—Lucius T. Stanley, Brooklyn, N. Y.
- 501,170—Duplex Electric Arc Lamp—Charles E. Scribner, assignor to Western Electric Co., Chicago, Ill.
- 501,080—Electric Arc Lamp—George Kirkegaard, Brooklyn, N. Y.
- 501,205—Incandescent Lamp Socket—Axel Eckstrom, Lynn, Mass.
- 501,172—Manufacture of Incandescent Electric Lamps—Elihu Thomson, Lynn, Mass.
- 501,246—Electric Locomotive—William E. C. Eustis, Milton, Mass.
- 501,183—Electric Signaling Circuit—William Daves, Jersey City, N. J.
- 501,087—Electric Signaling—Thomas D. Lockwood, Melrose, Mass., and S. J. Larned, Evanston, Ill.

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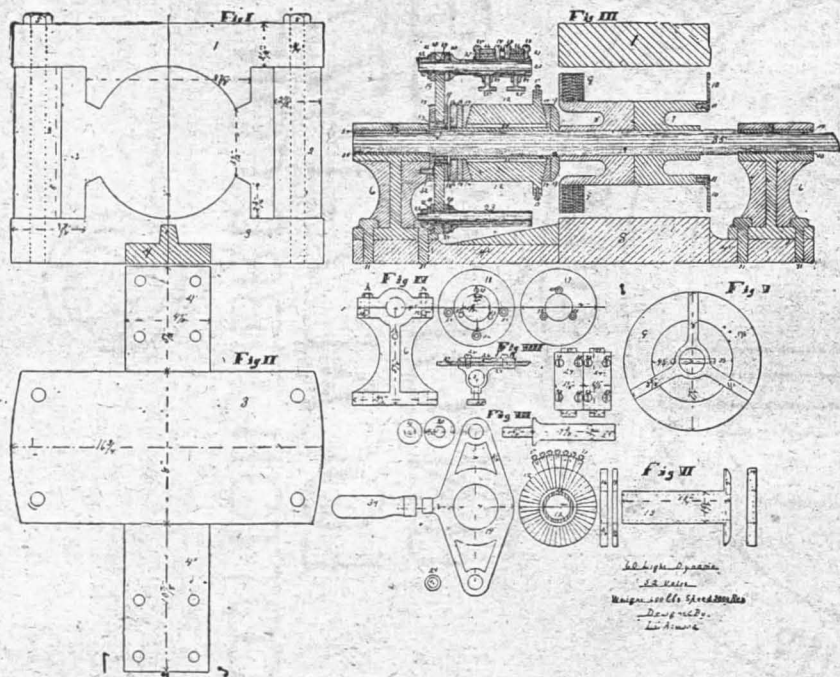
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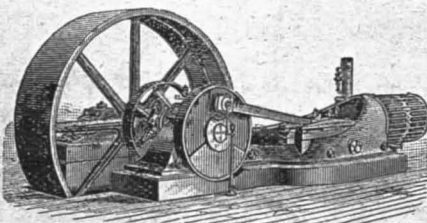
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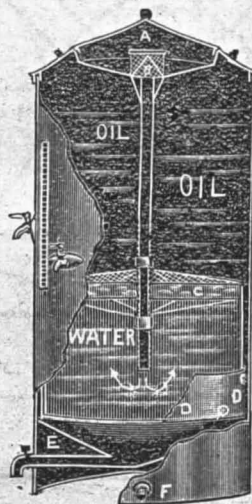
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